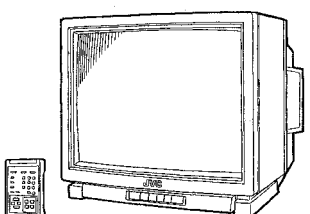
JVC

SERVICE MANUAL

COLOR MONITOR / RECEIVER

AV-27BM3(US)
AV-27CM3(US&CA)

BASIC CHASSIS
GY



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No.50718
May 1992

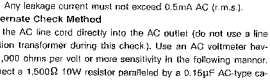
SPECIFICATIONS

Item	Content
Dimensions (W×H×D)	25-3/4" × 22-3/4" × 20-1/2" / 65.1cm ×57.5cm × 52.0cm
Weight	81.8 lbs / 37.2kg
Type	Color monitor / receiver
TV System and Color, Sound system	
TV RF System	CCIR (M)
Color, System	NTSC system,BTSC system (Multichannel sound)
TV Receiving Channels and Frequency	
VL Band	(02 ~ 06) 54MHz ~ 88MHz
VH Band	(07 ~ 13) 174MHz ~ 216MHz
UHF Band	(14 ~ 69) 470MHz ~ 806MHz
CATV Receiving Channels and Frequency	
(Quartz Synthesizer system)	
Low Band	(02 ~ 06) by (02 ~ 06)
High Band	(07 ~ 13) by (07 ~ 13)
Mid Band	(A ~ 1) by (14 ~ 22)
Super Band	(J ~ W) by (23 ~ 36) (54MHz~804MHz)
Hyper Band	(W + 1 ~ W + 28) by (37 ~ 64)
ULTRA Band	(W + 29 ~ W + 84) by (65 ~ 94 ,100 ~ 125)
Sub Mid Band	(A-8,A-4 ~ A-1) by (01,96 ~ 99)
TV/CATV Total Channel	180 Channels
Intermediate Frequency	
Video IF Carrier	45.75MHz
Sound IF Carrier	41.25MHz (4.5MHz)
SC IF Carrier	42.17MHz
Color Sub Carrier	3.58MHz
Antenna Input Impedance	75Ω (VHF/UHF) Terminal,F-Type Connector
Power Input	120V AC,60Hz
Power Consumption	MAX. 147W AVG. 103W [US]
Input Current	1.9A [CA]
Picture Tube	27"diagonally measured,In-Line type Full-square tube [US] 73cm(29") diagonally measured, In-Line type Full-square tube [CA]
Viewable Picture Size (W×H)	21-5/16" × 16" / 54.1cm × 40.6cm
High Voltage	29.0kV ± 1kV (at zero beam current)
Speaker	3-3/16" × 4-3/4" / 8×12cm ellipse ×2
External speaker terminals	Impedance 6~8Ω
Audio Power Output	1.2W + 1.2W
Video External Input	1 Vp-p 75Ω,RCA-Pin connector
Audio External input	500 mV rms (-4dBs), High Impedance,RCA-Pin connector
S-VIDEO IN	Y:1 Vp-p Positive (Negative sync provided ,when terminated with 75Ω) C:0.286 Vp-p (burst signal ,when terminated with 75Ω)
Variable Audio Output	More than 0~1550mV rms (+6dBs) Low Impedance (400Hz, 100% modu.),RCA-Pin connector
Accessories	Remote Control Unit (RM-C424) ×1

Design & specification subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection,no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual many create shock, fire, or other hazards.
4. **Use isolation transformer when hot chassis.**
   The chassis and any sub-chassis contrained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.
5. **Don't short between the LIVE side ground and NEUTRAL side grounding or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⊥) side GND, the NEUTRAL (⏚) side GND and EARTH (⏚) side GND. Don't short between the LIVE side GND and NEUTRAL side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.
6. If any repair has been made to the chassis, it is recommended that the B_1 setting should be checked or adjusted (See ADJUSTMENT OF B_1 POWER SUPPLY).
7. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approvided by the manufacturer of the complete product.
8. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
9. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
10. **Isolation Check**
    (Safety for Electrical Shock Hazard)
    After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs,metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
    (1) **Dielectric Strength Test**
    The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second.
    (. . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
    This method of test requires a test equipment not generally found in the service trade.
    (2) **Leakage Current Check**
    Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.) Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
    • Alternate Check Method
    Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).



11. **High voltage hold down circuit check.**
    After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.
    See item **"How to check the high voltage hold down circuit".**

■ ONLY CANADA

This mark shows a fast operating fuse, the letters indicated below show the rating.

FEATURES

- Low cost type chassis comprisod of three circuit boards : Main, CRT socket and MTS (accept S input and comb filter circuit).
- One-chip IC construction : IF, picture and sound detectors, video (luminance), horizontal and vertical deflection circuits are contained in a single chip 56 pin IC.
- Provided with miniature tuner (TV / CATV) : PLL synthesizer system TV/CATV totaling 180 channels.
- Built-in MTS circuit compatible with AV system.
- S-VIDEO input terminal for taking best advantage of Super VHS.
- Detection of user VR by MASTER COMMAND and increased features possible simultaneously (Multifunctional remote control permits picture and sound adjustment = AV STATUS).
- By using FUNCTION KEY, MENU can be displayed with instructional words available either in English or Spanish. (AV-27BM3 / CM3 (US) Only)
- By setting SERVICE MODE, SUB ADJUSTMENT (for TINT, COLOR, PICTURE and BLIGHT) can be accomplished using the keypad on the remote control unit.
- AV input, variable audio output and external speaker terminals are provided.

TECHNICAL INFORMATION

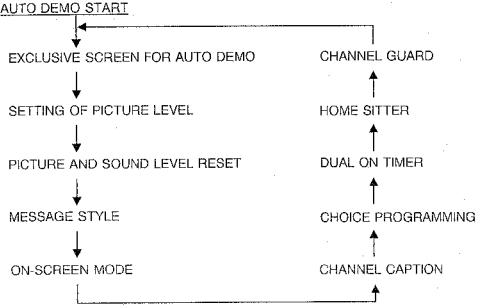
■ AUTO DEMO FUNCTION

The MASTER COMMAND IV has AUTO DEMO function which allows the TV set to introduce its major functions automatically without attendance of a shop clerk. Thus, this function will excite consumer's interst at the shop. AUTO DEMO can pefrom a sequential on-screen display automatically to explain the major functions of the TV set.
It takes about 4 minutes to complere a cycle of AUTO DEMO performance.
When the plug is removed from an outlet during AUTO DEMO performance, AUTO DEMO is restarted automatically from the beginning when the power is turned on again.

●Operating procedure

When MENU is displayed, press "O" key twice to start AUTO DEMO.
(Alternatively , AUTO DEMO can be started by pressing FUNCTION KEY and VOLUME KEY of the local keys simultaneously.)
To stop AUTO DEMO, press an optional key (FRONT KEY or REMOCON KEY)

●AUTO DEMO START



NOTE : In order produce demonstrational effect, the preset channels and time (in the built-in clock), etc. will be changed by the performance of AUTO DEMO.
Therefore, this must be taken into consideration when performing AUTO DEMO.

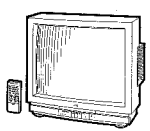
JVC

INSTRUCTIONS

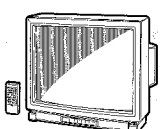
AV-26CM3
AV-27BM3/AV-27CM3

COLOR MONITOR/RECEIVERS

MASTERCOMMAND



AV-26CM3



AV-27BM3
AV-27CM3

For Customer Use:
Enter below the Model No. and Serial No. which are located on the rear of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

28. 27M3U-IBA-A

(No.50718) 1-1

OPERATING INSTRUCTIONS

JVC COMPANY OF AMERICA
DIVISION OF US JVC CORP.
41 Slater Drive, Elmwood Park, N.J. 07407

28. 27M3U-IBA-A
Ⓐ 1

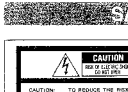
Thank you for purchasing a JVC color monitor/receiver (TV). Your JVC TV carries many useful features including the MASTER COMMAND system which allows operation of all TV functions via a single remote control unit.
To ensure your complete understanding, please read all instructions in this booklet before operation.

This instruction manual is written commonly for the AV-26CM3, AV-27BM3 and AV-27CM3 models; there are some sections where the AV-26CM3 model only is exemplified.

FEATURES

- **FS (Full-Square) picture tube.**
- **Comb filter for improved picture quality.**
- **180-Channel cable-compatible frequency synthesizer tuner with built-in MTS decoder.**
- **S-video input terminal for taking full advantage of Super VHS.**
- **Surround sound capability with external speaker terminals.**
- **Video/audio input and variable audio output terminals.**
- **MASTER COMMAND remote control with multi-color on-screen "Menu" display, allowing interactive, total TV operation.**
- **On-screen displays are available in English or Spanish.**
- **The current time (24-hour format) can be displayed on the screen.**
- **The TV can be automatically switched on and off at preset times each day.**
- **Picture and sound tone adjustments can be made.**
- **When receiving vacant broadcast channels, blue-blank screens and muted sound can be set.**

SAFETY PRECAUTIONS


CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS TV SET TO RAIN OR MOISTURE.

Caution:
Changes or modifications not approved by JVC could void the user's authority to operate the equipment.

CAUTION: TO INSURE PERSONAL SAFETY OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS UNIT.

1. Operate only from the power source specified on the unit.
2. Avoid damaging the AC plug and power cord.
3. Avoid improper installation and never position the unit where good ventilation is unattainable.
4. Do not allow objects or liquid into the cabinet openings.
5. In the event of trouble, unplug the unit and call a service technician. Do not attempt to repair it yourself or remove the rear cover.

Caution:
When you don't use this TV set for a long period of time, be sure to disconnect the power plug from the AC outlet for your safety. If the TV set is plugged into an AC outlet, a small amount of current is applied to the TV set even if the TV set's power is turned off.

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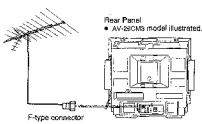
INSTALLATION

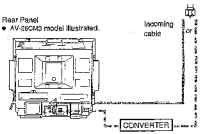
ANTENNA CONNECTIONS

An outdoor antenna is recommended for good TV picture reception. (For installation of the outdoor antenna system, consult your local dealer.)

VHF/UHF outdoor antenna



CABLE TV CONNECTIONS



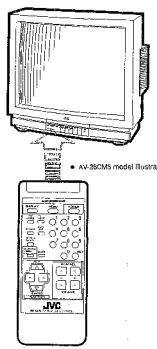
- Some cable companies require a converter box to receive all available programs. Others may require it for subscription or "premium" programming. Consult your local cable company for correct installation.
- When connecting both a cable (75-ohm coaxial) and a UHF antenna (300-ohm feeder), use the optional antenna mixer (CE41487) to make a single connection.

Note: With this antenna mixer, reception of cable channels higher than "Channel W + 17" is not possible.

REMOTE CONTROL USE

CORRECT USE

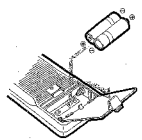
- Point to the Remote Control sensor of the TV set.
- The maximum operable distance is approximately 23 ft (7 meters) from the Remote Control sensor, and no more than 30° to either side of center.
- Operation of the Remote Control is most effective when there is nothing between it and the Remote Control sensor.
- Duration of the batteries is approximately 6 months to 1 year. (Duration varies depending on frequency of use.) Replace the batteries when the remote operation becomes unstable.



BATTERY INSTALLATION/NOTES

- Press the tab and lift up the cover in the direction of the arrow.
- Correctly install the batteries, observing (+/−) polarities as shown.
- Do not use a combination of old and new batteries or batteries of different types.
- If the batteries become exhausted, remove and replace them soon.
- If the Remote Control will not be used for more than 2 weeks, remove the batteries.
- When battery leakage occurs, clean the battery compartment with a soft cloth and replace the batteries.

■ The batteries provided might become exhausted earlier than specified on the left if they have deteriorated. If the Remote Control does not operate, replace the batteries with new ones.



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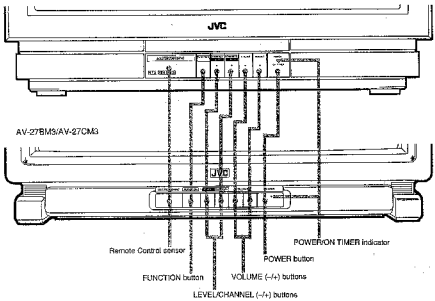
AV-27RM3
AV-27CM3

CONTROLS AND THEIR LOCATIONS

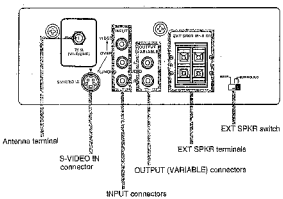
FRONT PANEL

AV-28CM3



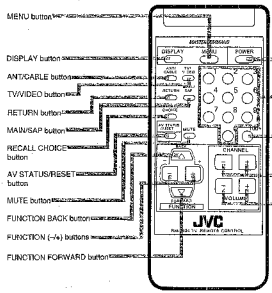
REAR PANEL

- The controls and their locations shown below are all common in the AV-28CM3, AV-27BM3 and AV-27CM3 models.



REMOTE CONTROL UNIT

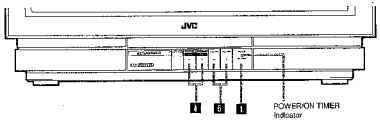
- The controls and their locations shown below are all common in the AV-28CM3, AV-27BM3 and AV-27CM3 models.



* The above POWER button and VOLUME (–/+) buttons have the same functions as the corresponding buttons on the front panel.

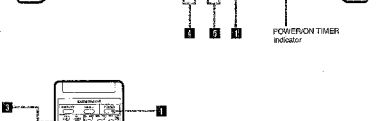
TV OPERATION

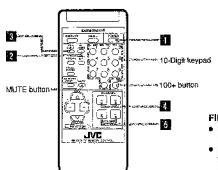
AV-26CM3



AV-27BM3/AV-27CM3

- Only the AV-26CM3 model's illustrations are exemplified after this section.





FIRST PREPARATIONS

- **Connect either Antenna or Cable TV** by following "Installation" instructions on page 4.
- **Insert batteries into the Remote Control unit** by following "Remote Control Use" instructions on page 5.
- **Connect the power cord to 120 V, 60 Hz AC outlet.** The power cord is supplied with a polarized plug. Therefore, it will only insert one way into the wall outlet. DO NOT DEFEAT THE POLARIZED PLUG. If you have difficulty, consult your local dealer.

BASIC OPERATING PROCEDURE

1 **Press the POWER button** on either the Remote Control or front panel. The POWER/ON TIMER indicator lights. Press this button again to turn power off.

Note: If the POWER/ON TIMER indicator remains lit even after the power is turned off, it shows the ON TIMER is in operation. See "5. DUAL ON TIMER" on page 21 and "7. HOME SITTER" on page 24.

2 **Press the TV/VIDEO button** on the Remote Control to select the TV mode.

Note: For mode selection using the front panel controls, see "FUNCTION BUTTONS" on page 12.

3 **Press the ANT/CABLE button** on the Remote Control to select the broadcast mode. Each time it is pressed, the mode is switched between "CHANNEL" and "CABLE". When connected to an antenna, select "CHANNEL" mode for normal VHF/UHF reception. When connected to cable TV, select "CABLE" mode. The on-screen display will show the following:

Note: For mode selection using the front panel controls, see "FUNCTION BUTTONS" on page 12.

4 **Select desired channel** using the CHANNEL (–/+) buttons on the Remote Control (or LEVEL/CHANNEL (–/+) buttons on the front panel). Pressing the (+) button advances to higher channels, (–) button to lower channels.

Note: Certain channels have been preset at the factory. It may be necessary to add or erase some channels in your areas. See "5. INITIAL SET-UP" on page 28 for presetting channels.

- Channels can be selected directly by using the 10-digit keypad on the Remote Control. For example, if you select channel 5, press "0" first, then press "5". (Be sure to press "0" first, before pressing "5" for channel 5.) For cable channels of 3-digit numbers, use the 100+ button. For example, if selecting channel 120, press the 100+ button first, then press "2", then "0". Also refer to the "CABLE TV CHANNEL CONVERSION CHART" on page 11.

Notes:
- When a video source such as a VCR is connected to the antenna terminal to be viewed on Channel 3 (or Channel 4), sometimes channel selection may result in an unclear or distorted picture. In this case, re-select Channel 3 (or 4) and the picture will become clear. (Also in this case, be sure to press "0" first, before pressing "3" (or "4") for Channel 3 (or Channel 4).)
- In the VIDEO mode, if either CHANNEL (–/+) button is pressed, the mode is switched to the TV mode.

5 **Press the VOLUME (–/+) buttons** on either the Remote Control or front panel to adjust volume to your desired listening level. Pressing the (+) button will increase sound volume, the (–) button will decrease sound volume. The volume level is indicated on the screen by reference number (0 to 50) and by bar scale as shown.

Note: The volume level can be made minimum instantly by pressing the MUTE button on the Remote Control. See "MUTE button" on page 33.

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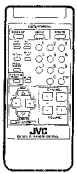


ON-SCREEN DISPLAY

- On-screen display illustrations in this instruction manual are in English indication mode. For Spanish indications, refer to the "SPANISH ON-SCREEN DISPLAY REFERENCE TABLE on pages 42 and 43, with reference numbers [①] to [⑨] specified for each on-screen illustration. See **ON-SCREEN LANGUAGE** on page 31 for changing the language mode.

(When in English indication mode)

(When in Spanish indication mode)

- Once the on-screen display appears on the screen, it disappears in a few seconds. (Only the clock time and channel number can be kept displayed on the screen. See "DISPLAY button" on page 33.)

- When tuned to a channel where no program is being broadcasted, the on-screen display may be unclear or blurred.
- On-screen displays are available in two different layouts (except for displays of the channel number and clock time). See "9. INITIAL SET-UP" on page 28 for selecting the display mode.

(With a black background)

(Without a black background)

- Channel numbers of the "CHANNEL CAPTION channels" can be displayed with their station call letters. If you prefer to do so, enter the station call letters when you program the "CHANNEL CAPTION channels". See "1. CHANNEL CAPTION" on page 17.

CABLE TV CHANNEL CONVERSION CHART

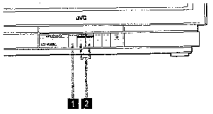
In addition to normal TV reception from an antenna for VHF (Channels 2 to 13) and UHF (Channels 14 to 69), your TV set is equipped to receive non-scrambled cable TV channels. Sub-mid band (A-8, A-4 to A-1), Mid band (A to I), Super band (J to W), Hyper band (W+1 to W+28) and Ultra band (W+29 to W+84) can be received by using the channel selections as shown in the following chart.

Note: Reception of channel A-5-("95" of the TV set's on-screen CABLE channel numbers) is not recommended for your TV set.

*	**	*	**	*	**	*	**
A-8	01	W+1	97	W+29	65	W+57	93
A-4	98	W+2	98	W+30	66	W+58	94
A-3	97	W+3	99	W+31	67	W+59	100
A-2	98	W+4	40	W+32	68	W+60	101
A-1	99	W+5	41	W+33	69	W+61	102
A	14	W+6	42	W+34	70	W+62	103
B	15	W+7	43	W+35	71	W+63	104
C	16	W+8	44	W+36	72	W+64	105
D	17	W+9	45	W+37	73	W+65	106
E	18	W+10	46	W+38	74	W+66	107
F	19	W+11	47	W+39	75	W+67	108
G	20	W+12	48	W+40	76	W+68	109
H	21	W+13	49	W+41	77	W+69	110
I	22	W+14	50	W+42	78	W+70	111
J	23	W+15	51	W+43	79	W+71	112
K	24	W+16	52	W+44	80	W+72	113
L	25	W+17	53	W+45	81	W+73	114
M	26	W+18	54	W+46	82	W+74	115
N	27	W+19	55	W+47	83	W+75	116
O	28	W+20	56	W+48	84	W+76	117
P	29	W+21	57	W+49	85	W+77	118
Q	30	W+22	58	W+50	86	W+78	119
R	31	W+23	59	W+51	87	W+79	120
S	32	W+24	60	W+52	88	W+80	121
T	33	W+25	61	W+53	89	W+81	122
U	34	W+26	62	W+54	90	W+82	123
V	35	W+27	63	W+55	91	W+83	124
W	36	W+28	64	W+56	92	W+84	125

*: Regular cable channel designations
**: Your TV set's corresponding on-screen CABLE -channel numbers

FUNCTION BUTTONS



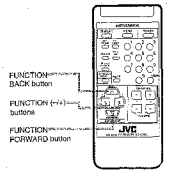
The FUNCTION button on the front panel selects the control modes for TV operation and picture adjustment.

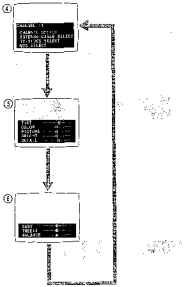
1 Press the FUNCTION button on the front panel. The first time it is pressed, the following display appears on the screen.

(At this time, the top line shows the current channel number.)

- Press the FUNCTION button to select the desired item for adjustment. Each time the FUNCTION button is pressed, the yellow-colored portion shifts in the order below to show that the colored item in the list can be adjusted.

(Three pages of on-screen displays are available with the FUNCTION button.)





① CHANNEL SELECT mode
② ANTENNA/CABLE SELECT mode
③ TV/VIDEO SELECT mode
④ MTS SELECT mode
⑤ TINT adjustment mode
⑥ COLOR adjustment mode
⑦ PICTURE adjustment mode
⑧ BRIGHT adjustment mode
⑨ DETAIL adjustment mode
⑩ BASS adjustment mode
⑪ TREBLE adjustment mode
⑫ BALANCE adjustment mode

Note: The Remote Control's FUNCTION BACK button or FORWARD button selects **only picture and sound adjustment modes: TINT, COLOR, PICTURE, BRIGHT, DETAIL, BASS, TREBLE and BALANCE.** The other control modes can be selected directly with the Remote Control's respective buttons. Pressing the FUNCTION FORWARD button advances the colored portion in the order as shown above for "Picture/Sound adjustment modes", pressing the FUNCTION BACK button advances in the reverse order.

2 After selecting the desired mode, **press the LEVEL/CHANNEL (–/+) buttons** on the front panel or FUNCTION (–/+) buttons on the Remote Control while the selected mode indication is being displayed to make your preferred adjustment. The Remote Control's FUNCTION (–/+) buttons control **only picture and sound adjustments.**

Notes:

- When using the front panel buttons, before the FUNCTION button is pressed for the first time with nothing displayed on the screen, the TV is in the "CHANNEL SELECT" mode. Therefore, in this mode, channel selection is possible by pressing the LEVEL/CHANNEL (–/+) buttons on the front panel.
- After completing picture adjustments from the Remote Control, selecting either the FUNCTION (–) or (+) button will return directly to the last chosen adjustment mode.

Continued on next page →

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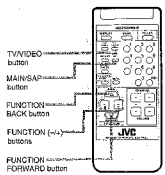
LEVEL/CHANNEL (–/+) buttons

① CHANNEL SELECT mode

In this mode, press the LEVEL/CHANNEL (+) button on the front panel to scan up the channel, and press (–) button to scan down the channel.
(The screen illustrations below show the case when the TV is in the "CHANNEL" mode. When in the "CABLE" mode, the "CABLE" indication appears instead of "CHANNEL".)

② ANTENNA/CABLE SELECT (broadcast) mode

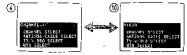
In this mode, press the LEVEL/CHANNEL (–/+) buttons on the front panel to change the broadcast mode between "CHANNEL" (for regular VHF/UHF channels) and "CABLE" (for cable channels).



③ TV/VIDEO SELECT mode

In this mode, press the LEVEL/CHANNEL (–/+) buttons on the front panel to switch the mode between "TV" (for off-air or cable TV broadcasts) and "VIDEO" (for video source which is connected to the TV set's INPUT connectors or S-VIDEO IN connector). See "CONNECTING TO EXTERNAL EQUIPMENT" on page 34.

Note: Mode selection can also be performed with the TV/VIDEO button on the Remote Control.



④ MTS SELECT mode

This TV set incorporates an MTS (Multichannel Television Sound) decoder to receive stereo broadcasts and any accompanying SAP (Second Audio Program), such as bilingual broadcasts.
Available sound will be:
(1) Monaural (MAIN) audio program (regular broadcasts)
(2) Stereo (MAIN) audio program
(3) Second Audio Program (SAP)
In this mode, the "← ON AIR" shows that MTS mode is now being broadcasted. Press the LEVEL/CHANNEL (–/+) buttons to change the reception mode among "STEREO", "SAP" and "MONO".
Each time it is pressed, the color of the indication changes from blue to yellow to show that the mode has just been switched.

Notes:

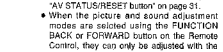
- Mode selection can also be performed with the MAIN/SAP button on the Remote Control. Each time it is pressed, the mode changes in the sequence of "STEREO" — "SAP" — "MONO" — "STEREO".
- If the TV set is always set to stereo mode, when a stereo broadcast is received, stereo sound is output automatically.
- If the received stereo signal is weak, noise may be heard. In such a case, press the LEVEL/CHANNEL (–/+) buttons (or MAIN/SAP button) to engage the MONO mode for better sound reception.
- If the received SAP signal is weak, the SAP will not be heard. Select the MONO mode for better sound reception.
- Even if both stereo and SAP broadcasts are received, both broadcasts cannot be heard at the same time.

When using the TV set for cable reception
Transmission of Cable TV signals may differ from off-air TV broadcasts. It is possible that the multichannel TV sound (MTS) may not be recieved satisfactorily.

⑤ – ⑫ Picture/sound adjustment modes

In these modes, an adjustment scale with a marker appears on the screen. Press the LEVEL/CHANNEL (–/+) buttons on the front panel or FUNCTION (–/+) buttons on the Remote Control to fine adjust each item to your preference according to the chart below. (The center position is only a reference level, rather than a standard setting.)

(–) button	Item	(+) button
Reddish	TINT	Greenish
Subdued	COLOR	Vivid
Light	PICTURE	Strong
Dark	BRIGHT	Bright
Soft	DETAIL	Sharp
Soft	BASS	Strong
Soft	TREBLE	Strong
Left	BALANCE	Right

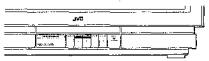


Notes:

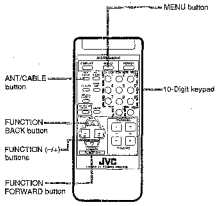
- When you wish to restore all adjustment modes to their scale's center position, use the AV STATUS/RESET button. For details, see "AV STATUS/RESET button" on page 31.
- When the picture and sound adjustment modes are selcted using the FUNCTION BACK or FORWARD button on the Remote Control, they can only be adjusted with the FUNCTION (–/+) buttons on the Remote Control, and cannot be adjusted with the LEVEL/CHANNEL (–/+) buttons on the front panel.

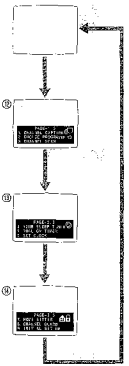
MENU BUTTON

The "MENU" button selects a list of functions that can be programmed for operating the TV more conveniently. This function is possible only from the Remote Control.



- Press the MENU button on the Remote Control to display the list of programmable convenience functions on the screen. The "MENU" consists of 3 pages. Press the MENU button repeatedly to display the pages in the sequence below.
- Press numbers "1" through "9" on the 10-digit keypad to select the corresponding function in the numbered "MENU".





PAGE-1

1. CHANNEL CAPTION

This function allows TV station's call-letters (up to 4 letters each) to be set, and enables them to be displayed with their Programme Channel numbers.

1) Tune to a Programme Channel whose station call-letter you want to set.

2) While the "PAGE-1" Menu display is on the screen, press "1" of the 10-digit keypad.

Note: Pressing the MENU button calls up the list of the station call-letters that have already been registered. This list display disappears in a few minutes and the previous display is restored.

The display will show:

- If 12 sets of station call-letters have already been set, the display shown below appears.

Press "1" (YES) to cancel one of the station call-letters that have already been set. Then, the display shown below appears. Tune to a Programme Channel whose station call-letter you want to cancel by pressing the 10-digit keypad. (Also use the 100+ button and ANT/CABLE button, if necessary.) The station call-letter of the Programme Channel that you tuned to is cancelled.

Finally, press "2" of the 10-digit keypad to clear the "CHANNEL CAPTION" Menu.

3) Press the FUNCTION FORWARD or BACK button to select each of the station call-letters to be stored. Available characters include the alphanumeric characters (26 English-language letters and 10 numerals), plus various punctuation marks (period, comma, etc.). Then, move the cursor to the next letter position by pressing the FUNCTION (+) button on the Remote Control. When you have finished selecting up to 4 call letters, press "1". [For example, if you store the letters "JVC", keep the FUNCTION FORWARD or BACK button pressed until the letter "J" appears. Then, press the FUNCTION (+) button to move the cursor one letter position to the right. Press FUNCTION FORWARD or BACK to select the letter "V", then move the cursor to the right again with FUNCTION (+). In the same way, select "C", then press "1" to end the operation.]

- If " " (space) or "–" (under bar) is entered for any of the 4 call-letters, the station call-letter is not registered.
- Pressing any button on the Remote Control, other than FUNCTION FORWARD, FUNCTION BACK, FUNCTION –, FUNCTION + or "1" of the 10-digit keypad, restores the "CHANNEL CAPTION" setting to its initial condition.

The CAPTION LIST is displayed for a few seconds before disappearing.

4) For setting the station call-letters of other Programme Channels, repeat steps 1) thru 3).

Notes: • Station call-letters can be set for up to 12 stations.
- Regular TV channels are indicated as "CH" and CATV channels are indicated as "CA" on the CAPTION LIST display.

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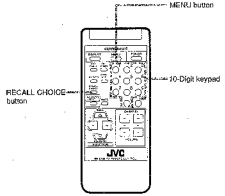
2. CHOICE PROGRAMMING

This function allows up to five Programme Channels which you often view to be stored in memory as "CHOICE" channels. Just by pressing the RECALL CHOICE button, performs automatic scanning of those registered Programme Channels. This also enables a Programme Channel which you want to view among the CHOICE channels to be directly tuned to.

1) While in the channel select mode (either "CHANNEL" or "CABLE" mode), determine the channel you wish to preset as a CHOICE channel and display it on the screen.
(For example, press "0" and "9" to display "CHANNEL 09".)



2) With "PAGE-1" MENU displayed on the screen, press "2" of the 10-digit keypad.
The display will show:

3) Press a number (1 to 5) on the 10-digit keypad for the CHOICE channel number you wish to preset. Then, the following display will appear.
(For example, press "1" for storing "CHANNEL 09" as the "CHOICE 1" channel.)
The CHOICE LIST is displayed for a few seconds.

RECALL CHOICE button

- Pressing the RECALL CHOICE button calls up the "CHOICE LIST", and performs automatic scanning of the "CHOICE" channels. The Programme Channel number of the "CHOICE" channel which is currently being viewed, blinks on the list.

Press the corresponding number of the 10-digit keypad to select the preferred channel.

3. CHANNEL SCAN

This feature allows automatic scanning of the channels which have been stored following the procedures of "9. INITIAL SET-UP" (described on page 28) in ascending order.

1) With "PAGE-1" MENU displayed on the screen, press "3" of the 10-digit keypad.
- All memorized channels (either "CHANNEL" or "CABLE" mode) will now scan sequentially in ascending order beginning with the channel that the TV is tuned to. Scanning will stop automatically when the original channel is reached. "SCAN STOP" appears to show the CHANNEL SCAN mode has finished.

2) Press any button on the Remote Control, if you wish to stop scanning at a certain channel before the original channel is reached.
To resume scanning, press the MENU button and then "3" on the 10-digit keypad.

Notes:
- When the TV is in the "CABLE" mode, the "CABLE" indication appears on the screen instead of "CHANNEL".
- For changing memorized channels, see "9. INITIAL SET-UP".
- If you wish to start CHANNEL SCAN at a specific channel, first select the broadcast mode (CHANNEL or CABLE) and the channel number, and then follow the instructions above.
- While actual CHANNEL SCAN is being performed, all front panel buttons become inoperable.

PAGE-2

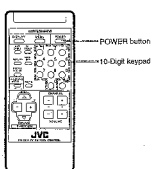
4. 12HR SLEEP TIMER

The "12HR SLEEP TIMER" feature allows you to turn off your TV automatically at a preset time.

1) With "PAGE-2" (or "PAGE-1" or "PAGE-3") MENU displayed on the screen, press "4" of the 10-digit keypad.
The display will show:

- If the built-in clock has not been set to operate properly, the 12HR SLEEP TIMER will not function. In this case, the following display will appear on the screen to show that the clock requires adjustment.

Press "1" (YES) of the 10-digit keypad to adjust the clock. (If "2" (NO) is pressed, the warning message "YOU CANNOT OPERATE SLEEP TIMER!" is displayed.)
Set the built-in clock. (See "5. SET CLOCK" on page 23 for details.) When the clock is adjusted, the message "THANK YOU!" appears. Then, the following display appears to show that the 12HR SLEEP TIMER is now ready to be set.



2) Press the numbers on the 10-digit keypad to set the desired switch-off time. The 12HR SLEEP TIMER can be set for up to 11 hours 59 minutes from the current time.
For example, if it is now 7:00 PM, and you want the TV to switch off automatically at 9:00 PM, press "9", "0" and "0". (The "AM/PM" setting is automatically done.) The selected time of "9:00 PM" appears.
- When you select "1" for hour setting (for example, "1:05 AM"), remember to press "0" first, then press "1", "0" and "5".

3) To cancel the 12HR SLEEP TIMER setting, press the current time (the current time setting of the TV's built-in clock).

Notes:
- If an invalid time is selected (for example: "5:87"), it will be rejected and the 12HR SLEEP TIMER must be reset properly.
- While the 12HR SLEEP TIMER is activated, if the POWER button is pressed to turn the power off and on again, the 12HR SLEEP TIMER will be cancelled.
- While the 12HR SLEEP TIMER is activated, if the power is disconnected (such as in the case of power failure, etc.) and reapplied later, the TV is turned off. When disconnected only for a couple of minutes, the 12HR SLEEP TIMER is reactivated, however, it turns the TV off later than the set time by the amount of time of interruption.
- The 12HR SLEEP TIMER may turn off the TV a little earlier than the preset time.
- When the remaining time reaches 1 minute, the message "GOOD NIGHT!", will be displayed and continue to blink until the power turns off automatically.

5. DUAL ON TIMER

The "DUAL ON TIMER" feature allows you to turn on your TV automatically at a preset time and on specific channels. The DUAL ON TIMER is available for 2 different settings.

With "PAGE-2" (or "PAGE-1" or "PAGE-3") MENU displayed on the screen, press "5" of the 10-digit keypad. The display will show:

- At this time, if the display of "POWER INTERRUPTED/WOULD YOU SET CLOCK FIRST?" (which may appear during the 12HR SLEEP TIMER procedure) appears, it shows that the clock is not operating, and the DUAL ON TIMER will not function. Press "1" (YES) to set the clock. (If "2" (NO) is pressed, the warning message "YOU CANNOT OPERATE DUAL ON TIMER!" is displayed.) Set the clock. (See "5. SET CLOCK" on page 23 for details regarding clock setting.) After the clock has been set, the message "THANK YOU!" appears to show that the clock has just been adjusted and the DUAL ON TIMER is now ready to be set.

Two different settings are possible. Press "1" or "2" to select the setting position. The display will show:

Current setting

Continued on next page →

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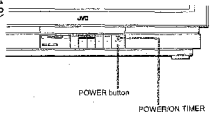
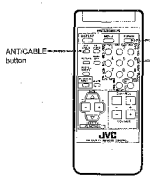




1) SET

Press "1" to start the DUAL ON TIMER for turning the TV on automatically at the preset time shown. "YES" appears to show that the DUAL ON TIMER has started.

2) CANCEL

Press "2" to cancel the setting. "NO" appears to show that the DUAL ON TIMER has been cancelled.

3) CHANGE

Press "3" to re-adjust the setting. Then, the following display appears.

Press the numbers on the keypad to set the desired switch-on time. For example, if you want the TV to switch on automatically for CHANNEL 12 at 7:00 AM, press "7", "0" and "0". (When you select "1" for hour setting, remember to press "0" first, then press "1".) The selected time of "7:00" appears and immediately the display changes to:

Then, press "1" to select the "AM" setting. (Press "2" to select the "PM" setting.) Then, the following display appears. Press "1" and "2" for specifying "CHANNEL 12".

Now the following display appears on the screen to show the DUAL ON TIMER is set to "7:00 AM, CHANNEL 12" with the "YES" indicating the DUAL ON TIMER has started. Finally, press the POWER button to turn the power off. The POWER/ON TIMER indicator remains lit to show that the DUAL ON TIMER is in operation.

Notes:

- If an invalid time is selected (for example: "17:70"), it will be rejected and the DUAL ON TIMER must be reset properly.
- After the DUAL ON TIMER has been properly set, it functions only once for each setting (up to 2 settings are possible) to turn on the TV's power. (It does not operate repeatedly every day at the same time as a serial timer.)
- Once the DUAL ON TIMER turns the TV on automatically, if the TV is not operated in any way, after 2 hours the TV will turn off automatically for safety. A single adjustment, even audio level adjustment or channel selection, will cancel this switch-off function.
- While the DUAL ON TIMER is activated, if the power is disconnected (such as in the case of power failure, etc.) and reapplied later, the DUAL ON TIMER is cancelled. When disconnected only for a couple of minutes, the DUAL ON TIMER is reactivated, however, it turns the TV on later than the set time by the amount of time of interruption.
- If the channel which has already been set as a "Guarded Channel" is selected, that channel is rejected and cannot be set for the DUAL ON TIMER. (For details of the Guarded Channels, refer to page 28.)

6. SET CLOCK

Your TV has a built-in clock. Set the clock as follows:

1) With "PAGE-2" (or "PAGE-1" or "PAGE-3") MENU displayed on the screen, press "8" of the 10-digit keypad. The display will show:

2) Then, press the numbers on the 10-digit keypad to set the current time. For example, if the present time is 7:35 PM, press "0", "7", "3" and "5" (or press "7", "3" and "5"). Then, the display changes to:

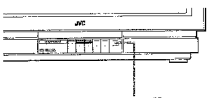
3) Press "2" to select the "PM" setting. (Press "1" to select the "AM" setting.) Then, the display changes to the following to show the current time is set and the clock starts operating.

Notes:

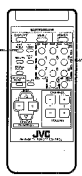
- If an invalid time is selected (for example: "17:70"), it will be rejected and the built-in clock must be reset properly.
- If you wish to set the clock precisely in step 3) above, press "2" (or "1") at the same instant as a time signal.
- The built-in clock may loose time depending on the manner in which the TV is used or the frequency of the power source. If the time difference becomes great, re-adjust the clock.
- If the power is disconnected (such as in the case of a power failure, etc.), and reapplied later, the clock will stop operating. (The clock status can be checked on screen. Press the DISPLAY button. If the clock has stopped, the message "CLOCK NOT SET" is displayed instead of the current time. See "DISPLAY button" on page 33 for detail.) When disconnected only for a couple of minutes, the clock is reactivated, however, it will be later than the actual time by the amount of time of interruption.

7. HOME SITTER

The "HOME SITTER" feature enables the TV to be turned on and off automatically at preset times every day.
With "PAGE-3" (or "PAGE-1" or "PAGE-2") MENU displayed on the screen, press "7" of the 10-digit keypad. The display will show:



- At this time, if the display of "POWER INTERRUPTED/WOULD YOU SET CLOCK FIRST?" appears, it shows that the clock is not operating, and the HOME SITTER will not function.
  Press "1" (YES) to set the clock. (If "2" (NO) is pressed, the message "YOU CANNOT OPERATE HOME SITTER!" is displayed.)
  Set the clock. (See "SET CLOCK" on page 23 for details regarding clock setting.) After setting the clock, the message "THANK YOU!" appears to show that the clock has just been adjusted and the HOME SITTER is now ready to be set.



1) SET
Press "1" to place the HOME SITTER in standby. The ON/OFF time and channel number which have been previously set will be displayed. When the POWER button is pressed to turn the TV off, the POWER/ON TIMER indicator lights and "YES" appears on the screen to show that the HOME SITTER is in operation.

2) CANCEL
Press "2" to cancel the HOME SITTER. "NO" appears to show that the HOME SITTER has been cancelled.

3) CHANGE
Press "3" to re-adjust the HOME SITTER setting. Follow the on-screen displays to set the switch-on time, switch-off time and channel number, using the 10-digit keypad.

Set the switch-on time.

Select "AM" or "PM".

Set the switch-off time.

Select "AM" or "PM".

Set the channel number.

When the channel number is set, the display will show:

- This display shows that the HOME SITTER is set to switch the TV on at 1:30 PM, switch it off at 2:30 PM and the channel to be received is "CABLE 13".

Notes:
- If an invalid time or channel number is selected, it will be rejected and it must be reset properly.
- If you wish to reset the switch-on time only, stop keying in data (waiting until the on-screen display disappears) after keying in the AM/PM setting, or press keys other than the 10-digit keypad. And, if you wish to reset the switch-on and switch-off time only, the procedure is the same.
- The function that automatically turns the TV off for the ON TIMER, if no TV operation is performed after 2 hours, does not operate for the HOME SITTER.
- If the power is disconnected (such as in the power failure, etc.), and reapplied later, the HOME SITTER will be cancelled. When disconnected only for a couple of minutes, the HOME SITTER is reactivated, however, it turns the TV on and off later than the set time by the amount of time of interruption.
- If the channel which has already been set as a "Guarded Channel" is selected, that channel is rejected and cannot be set for the HOME SITTER. (For details of the Guarded Channels, see next page.)

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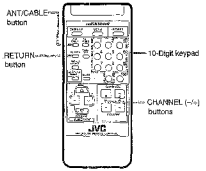
LEVEL/CHANNEL (–/+) buttons



8. CHANNEL GUARD

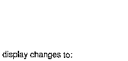
The "CHANNEL GUARD" feature allows you to assign an "ID number" to specific channels of your choice, making them "Guarded Channels". This prevents these specific channels from being selected, unless the "ID number" is keyed in.

First select a channel you wish to set as a Guarded Channel. With "PAGE-3" (or "PAGE-1" or "PAGE-2") MENU displayed on the screen, press "8" of the 10-digit keypad. The display will show:

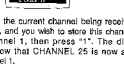
Then, press "0". The display changes to:

- Channel numbers displayed are the Guarded Channels, if already previously set.

1) SET
Press "1". The display changes to:



For example, if the current channel being received is "CHANNEL 25", and you wish to store this channel as Guarded Channel 1, then press "1". The display changes to show that CHANNEL 25 is now set as Guarded Channel 1.



2) CANCEL
Press "2" to cancel the Guarded Channel. The display will show:

With this display on the screen, press the number of the Guarded Channel you wish to cancel from the list. For example, if you wish to cancel CHANNEL 25 (in this case, Guarded Channel 1) from the list, press "1". Then the display changes to show that CHANNEL 25 (Guarded Channel 1) has been cancelled.

3) SET ID NO.
Press "3" to set the ID number. The display will show:

Press any 3 digits you wish to be the ID number. When completed, "ENTERED" appears to show that the ID number you have just keyed in is set.

Viewing Guarded Channels

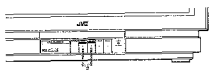
1) Select the Guarded Channel. (If the Guarded Channel you wish to view is CHANNEL 25, press "2" and "5".) Then, the following display appears:

2) Key in the ID number using the keypad. The channel appears.
3) If the keyed-in ID number is incorrect, the display shows:

And the Guarded Channel you have selected cannot be seen.

Notes:

- If you wish to change the ID number, follow the "3) SET ID NO.".
- If the power is disconnected (such as in the case of power failure, etc.), and reapplied later, the ID number is reset to "000".
- When performing the RECALL CHOICE or CHANNEL SCAN function, or selecting channels using the CHANNEL (–/+) buttons, the Guarded Channels are skipped.
- In the following cases, the Guarded Channel can be seen without keying in the ID number:
  - When you press the RETURN button from a channel which has been selected immediately after viewing a Guarded Channel.
  - When you press the ANT/CABLE button from a channel of a different broadcast mode (CHANNEL or CABLE) which has been selected immediately after viewing a Guarded Channel.
  - When you press the CHANNEL (–/+) buttons on the Remote Control or LEVEL/CHANNEL (–/+) buttons on the front panel, while in the MANUAL PROGRAM mode of the INITIAL SET-UP (on MENU PAGE-3). If the selected channel which has already been ADDed happens to also be a Guarded Channel.
  - When you press "4" (CHANNEL UP) or "5" (CHANNEL DOWN) of the 10-digit keypad while in the MANUAL PROGRAM mode of the INITIAL SET-UP, if the Guarded Channel happens to also be the next higher or lower channel following the one to which you are presently tuned.
  - While in the AUTO PROGRAM mode of the INITIAL SET-UP, if the AUTO PROGRAM is interrupted immediately when a Guarded Channel appears.
  - When the channel which has already been set for the ON TIMER or HOME SITTER is set as a Guarded Channel.
- If you forgot the ID number which you have set, reset it.



LEVEL/CHANNEL (–/+) buttons

9. INITIAL SET-UP

The INITIAL SET-UP feature allows you to perform basic settings for the TV status. This consists of Channel Memory (Auto/Manual), Message Style, Noise Mute, Set-Up AV Status and On-Screen Language.

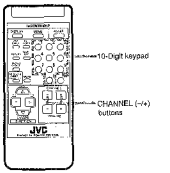
Note: When performing Channel Memory (MANUAL PROGRAM), select an appropriate broadcast mode (either "CHANNEL" or "CABLE") before you select the INITIAL SET-UP mode.

With PAGE-3 (or PAGE-1 or PAGE-2) MENU displayed on the screen, press "3" of the 10-digit keypad. The "INITIAL PAGE-1/2" of the "9. INITIAL SET-UP" Menu is called up on the screen. Another press of "9" (or MENU) calls up the "INITIAL PAGE-2/2". One more press of "9" (or MENU) again restores the regular mode.

Press appropriate 10-digit keypad to select the item.

1) AUTO PROGRAM

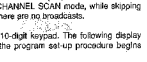
This function allows memorizing the channels automatically to match the TV broadcasts and cable channels of your area. The memorized channels can be selected by the CHANNEL (–/+) buttons on the Remote Control or LEVEL/CHANNEL (–/+) buttons on the front panel, or in the CHANNEL SCAN mode, while skipping channels where there are no broadcasts.



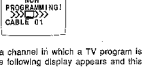
10-Digit keypad

CHANNEL (–/+) buttons

Press "1" of the 10-digit keypad. The following display will appear and the program set-up procedure begins automatically.



When tuned to a channel in which a TV program is broadcasted, the following display appears and this channel is memorized.



When the AUTO PROGRAM procedure (scanning and memorizing) is completed, it will be indicated by the following display.

Notes:

- If the broadcast signals are weak, the channel may not be memorized. In this case, perform the MANUAL PROGRAM procedure.
- The AUTO PROGRAM procedure takes approximately 2 minutes. If you wish to stop this procedure, press any button on the Remote Control.

2) MANUAL PROGRAM

Similar to the AUTO PROGRAM function above, this is for memorizing channels, but it is performed manually. The result of Manual Programing is also effective when performing up/down channel selection or CHANNEL SCAN.

Press "2". The display will show:

The current tuned-in channel

Simply follow the on-screen instructions.

Note: First select the broadcast mode before entering this MANUAL PROGRAM mode.

(1) Press "1" (ADD) to add this channel in memory. A bar "–" will appear between the broadcast mode (CHANNEL or CABLE) and the channel number to show that the channel has been memorized.

(2) Press "2" (ERASE) to erase this channel from memory. If you do not wish to preset it in memory or if no TV station is broadcasting on it. The bar between the broadcast mode and channel number will disappear.

(3) Press "4" (CHANNEL DOWN) or "5" (CHANNEL UP) to select the next lower or higher channel.

(4) Press "3" (END) when you have stored all the required channels in memory.

(5) When you wish to store channels of the other broadcast mode, select the mode first, then repeat steps (1) thru (4).

- In step (3) above, if selecting channels is difficult, press the CHANNEL (–/+) buttons on the Remote Control.
- Be sure to perform these operations using the Remote Control.

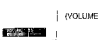
3) MESSAGE STYLE

This function is for switching the black background of the on-screen display on and off (except for channel numbers and clock time).

Press "3". The display will show:

Press "1" to select the on-screen display mode with a black background.

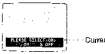
Press "2" to select the on-screen display mode without a black background.



4) NOISE MUTE

The NOISE MUTE feature allows replacing the "snowy" screen of vacant non-broadcast channels with a blue-blank screen, and at the same time, muting the noisy sound.

Press "4". The display will show:



Press "1" to select the Noise Mute mode for a blue-blank screen with no sound.

Press "2" to release the mode. Screen is normal (without blue-blank screen) and sound can be heard.

Note: The Noise Mute mode can be activated only when either no signal is being input or when a weak signal is being received.

- If you wish to view a TV program having a weak broadcast signal, release the Noise Mute mode to prevent it from being activated.
- If you use an antenna system, before adjusting it (extending, rotating, etc.), release the Noise Mute mode to prevent it from being activated when the signal conditions change.
- When playing back VCR recordings or the like, picture and sound muting conditions might continue to occur for a few seconds after engaging the Play mode. Release the Noise Mute mode when necessary.
- When the Noise Mute mode is engaged, it is also applied to the output signals from the OUTPUT (VARIABLE) connectors. Release the Noise Mute mode to prevent it from having effect when connecting external components to the TV.

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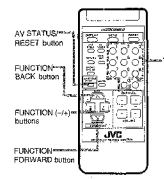


5) SET-UP AV STATUS

Your TV set incorporates the AV STATUS memory that can store 2 variations for preset picture/sound adjustments, allowing you to change the picture/sound tone/speaker balance to your preference depending on each source.

Press "5". The display will show:

(1) Make picture adjustments to your preference. Use the FUNCTION BACK/FORWARD buttons to select the item, and use the FUNCTION (–/+) buttons to adjust each item. If you also wish to make sound adjustments, press "1" to advance the adjustment mode display. The following display will appear. (Press "1" again to return to the picture adjustment display.)

(2) Make sound adjustments to your preference. Use the FUNCTION BACK/FORWARD buttons to select the item, and use the FUNCTION (–/+) buttons to adjust each item. When finished, press "2". The following display will appear.

(3) Press "1" to store the setting as the "AV STATUS A". (Press "2" to store it as the "AV STATUS B".) Then the picture/sound adjustment setting (items and their reference scales) appears for a few seconds.

(4) Repeat steps (1) thru (3) for making another AV STATUS setting.

- When you wish to choose the preset AV STATUS, just press the AV STATUS/RESET button to choose either AV STATUS position. For details, see "AV STATUS/RESET button" on the right.

AV STATUS/RESET button

Use this button for choosing the preset AV STATUS or for resetting the picture/sound adjustment item(s). Press the AV STATUS/RESET button on the Remote Control.
The following display appears.

- Another press of the AV STATUS/RESET button resets all previously adjusted items to their center positions.

1. AV STATUS A

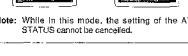
Press "1" of the 10-digit keypad for selecting AV STATUS A. The picture and sound change as preset for "AV STATUS A". Then the picture and sound adjustment settings (items and their reference scales) appear, each for a few seconds.

2. AV STATUS B

Press "2" to select AV STATUS B. The picture and sound change as preset for "AV STATUS B". Then the picture and sound adjustment settings (items and their reference scales) each appear for a few seconds.

3. RESET

Press "3" when you wish to reset all adjusted items (TINT, COLOR, PICTURE, BRIGHT, DETAIL, BASS, TREBLE and BALANCE) back to their center positions at the same time. The on-screen display appears and changes as follows:



Note: While in this mode, the setting of the AV STATUS cannot be cancelled.

6) ON SCREEN LANGUAGE

This television set allows two language options of English or Spanish for on-screen displays.
Press "6". The display will show:

Press "1" to set the language mode of the on-screen indications to English ("ENGLISH" is indicated; "INGLÉS" is indicated in Spanish-language mode).

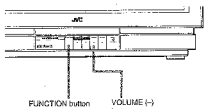
(When setting to picture adjustment display)

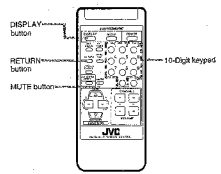
Press "2" to set the language mode of the on-screen indications to Spanish ("SPANISH" is indicated; "ESPAÑOL" is indicated in Spanish-language mode).

(When setting to picture adjustment display)

Note:

- On-screen display illustrations in this manual are in English-language mode. When set to Spanish mode, refer to the "SPANISH ON-SCREEN DISPLAY REFERENCE TABLE" on pages 42 and 43, with reference numbers (1) to (9) specified for each on-screen illustration. See above for language mode selection.





MASTER COMMAND SELF-DEMONSTRATION FEATURE

Your TV has a self-demonstration feature for the incorporated MASTER COMMAND system, demonstrating automatically all major functions of the MASTER COMMAND.

With PAGE-1 (or PAGE-2 or PAGE-3) MENU displayed, press "0" of the 10-digit keypad twice ("0 - 0"), or press the FUNCTION and VOLUME (–) buttons on the front panel simultaneously. The demonstration automatically begins in the following order. If you wish to stop the demonstration anytime while it is running, press any key on the Remote Control or on the front panel.

Demonstration procedure

SET CLOCK*
↓
Picture adjustment ←
↓
RESET (picture adjustment)
↓
MESSAGE STYLE
↓
ON-SCREEN LANGUAGE
↓
CHANNEL CAPTION
↓
CHOICE PROGRAMMING
↓
DUAL ON TIMER
↓
HOME SITTER
↓
CHANNEL GUARD

* This SET CLOCK mode can operate only when the built-in clock is stopped.

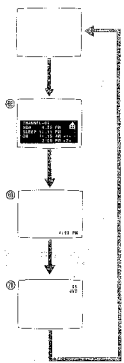
Caution: Operating this function adjusts the clock, timer settings, and all other functions to specific demonstration settings. Therefore, re-adjustment of these settings is required once the demonstration has been executed.

MORE USEFUL FUNCTIONS

DISPLAY button

Press the DISPLAY button on the Remote Control. The channel number of the program you are now viewing, the 12HR SLEEP TIMER/DUAL ON TIMER settings, HOME SITTER setting, and the current time are displayed in the order as shown below with each press of the DISPLAY button. The current time or channel number/call letter display remain on the screen until the DISPLAY button is pressed again.

Note: If the 12HR SLEEP TIMER and/or DUAL ON TIMER and/or HOME SITTER is cancelled, their settings will not be displayed.



RETURN button

Press the RETURN button on the Remote Control.
The previously viewed channel will appear on the screen.
Press RETURN again to switch back to the original channel. Repeatedly pressing RETURN switches between these two channels.

MUTE button

Press the MUTE button on the Remote Control.
The sound of the TV program being viewed will be decreased to minimum and "MUTING" will appear on the screen.
Press again to restore the sound.

Note: Changing the audio volume also restores the sound.

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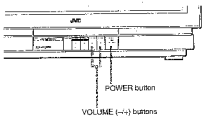
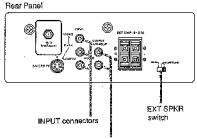
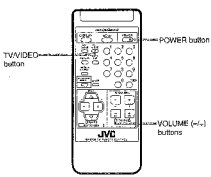
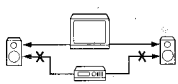
CONNECTING TO EXTERNAL EQUIPMENT





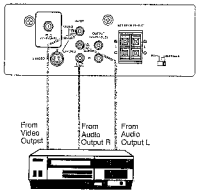


- **Prior to making any connections to your TV set, be sure to turn the POWER OFF.**
- **For a more detailed understanding of each connection, it is recommended that you read the instruction manual for each connected component.**
- **If you use video or audio equipment placed too near the Monitor/Receiver, picture and/or sound may become distorted due to interference between these components. In such a case, separate each piece of equipment to a sufficient distance.**
- **The following shows examples for connecting external equipment.**
- **Do not connect another audio source to the same speaker to which the TV set is connected, otherwise damage may result to the amplifier of the TV set or to that of the other audio source.**

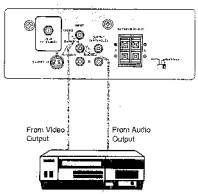


INPUT connectors

- To view a connected video source, press the TV/VIDEO button on the Remote Control to engage the VIDEO mode.

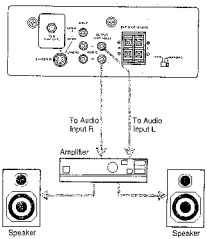


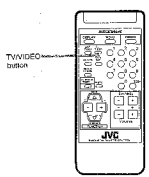
Note: If the connected video equipment outputs monaural audio, connect to the AUDIO L/MONO (left channel) connector. Sound will be output from both right and left speakers.

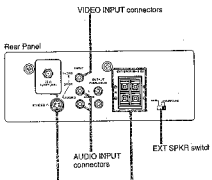


OUTPUT (VARIABLE) connectors

- The audio signals available at these connectors are the same as the audio source of the program being monitored on the TV screen.
- Connect to a stereo amplifier to listen to the sound through external speakers connected to the amplifier. The audio output level can be adjusted via the VOLUME (–/+) buttons on either the Remote Control or front panel.
- If the sound which is output from the TV's built-in speaker is noisy, set the EXT SPKR switch to MAIN, to turn off the sound from the built-in speakers.



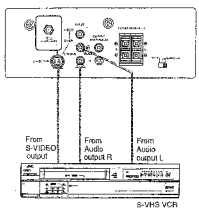




S-VIDEO IN connector

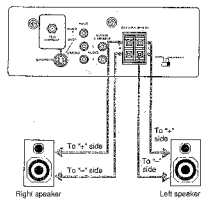
- S-VIDEO IN connector is for the separated Y (luminance) and C (chrominance) video signals conforming to the NTSC system, ideal for connection of an S-VHS (Super VHS) VCR.
- Connect the audio output cable to the AUDIO INPUT connectors.
- Press the TV/VIDEO button on the Remote Control to engage the VIDEO mode to view pictures from the S-VHS VCR.

Note: When equipment is connected to this connector, the VIDEO INPUT connector function becomes inoperable.



Using external speakers

- Connect speaker cables while making sure that the wiring of speaker's polarities is correct.
- Set the EXT SPKR switch to MAIN. The sound from the TV's built-in speakers is turned off, and the sound will be heard only from the speakers which are connected to the EXT SPKR terminals.



Notes:

- Use speakers of 6- to 8-ohm impedance.
- If the "+" and "–" terminals are short-circuited, it may cause damage to the TV set.
- It is recommended to use magnetically shielded speakers. If you use speakers other than these, place them at a sufficient distance from the TV set, otherwise the magnetic field generated from such speakers cause unstable picture color.
- Do not connect another audio source to the same speaker to which the TV set is connected, otherwise damage may result to the amplifier of the TV set or to that of the other audio source.

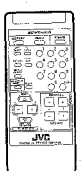
Setting the EXT SPKR switch

The output sound differs depending on the switch setting.

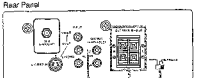
Switch setting	Sound output	
	Built-in speakers	Speakers connected to the EXT SPKR terminals
MAIN	No sound	Normal sound
SURROUND 1	No sound	Surround effect sound
SURROUND 2	Normal sound	Surround effect sound

(No.50719) 1-19

AV-27BM3
AV-27CM3



Rear Panel



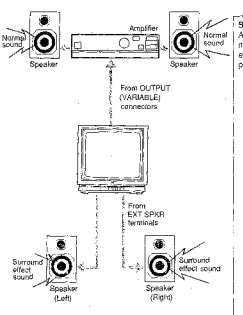
Listening to surround sound

"Surround sound" is a sound reproduction process resulting in a three-dimensional aural experience that is a combination of "surround effect sound" and "normal sound", delivered from both of the left and right channels at the same time.

- The surround effect sound is possible only when the sound source being listened to is stereo. (In the case of monaural sound source, no sound from the speakers connected to the external speaker terminals will be output. Therefore, listening to surround sound is impossible.)
- Set the marker of the scale of the BALANCE adjustment mode to its center position using the FUNCTION button(s) and/or the AV STATUS/RESET button. See pages 12 and 31.

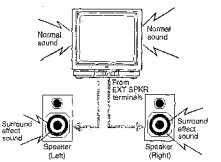
When using an external stereo component system

- Connect each component as illustrated.
- Set the EXT SPKR switch to "SURROUND 1".



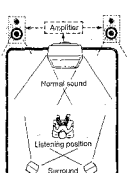
When connecting speakers to the EXT SPKR terminals

- Connect speakers to the EXT SPKR terminals.
- Set the EXT SPKR switch to "SURROUND 2".



Speaker positioning

As shown below, position the speakers so that the normal sound can be heard in front and the surround effect sound can be heard in back of the listening position.



■ MICRO PROCESSING CONTROL UNIT (IC701 : MN1872013JGK1)

A newly developed IC701 (sensor control micro processor), which corresponds to the JVC MASTER COMMAND Ⅳ is employed in the AV-27BM3 / CM3. Thanks to the IC701, channel selecting speed, mute function , SUB VOLUME (for TINT, COLOR, PICTURE and BLIGHT) and AUTO DEMO function have been remarkably improved.

●IN / OUT put Port and System constant

PIN No.	Port Name	FUNCTION	
		IN / OUT	
4	ADIN0	IN	AFC S curve
5	ADIN1	IN	SUB ADJ (Service mode GND)
6	ADIN2	IN	LOCK (Tuner serial control)
7	P50	OUT	System constant A
8	P51	OUT	System constant B
9	P52	OUT	System constant C
10	P53	OUT	System constant D
11	P54	OUT	CLOCK (Tuner serial control)
12	P55	OUT	DATA (Tuner serial control)
13	P56	OUT	ENABLE (Tuner serial control)
14	P57	OUT	Key scanning
17	DAC0	OUT	VOLUME control
18	DAC1	OUT	TINT control
19	DAC2	OUT	COLOR control
20	DAC3	OUT	PICTURE control
21	DAC4	OUT	BRIGHT control
22	DAC5	OUT	DETAIL control
23	DAC6	OUT	BASS control
24	DAC7	OUT	TREBLE control
25	DAC8	OUT	BALANCE control
27	DAC10	OUT	AUDIO MUTE (5V)
30	P46	OUT	TV /VIDEO input switching
31	P45	OUT	MTS mode switching MONO / STEREO
32	P44	OUT	MTS mode switching MAIN / SAP
33	P43	IN	Key scanning
34	P42	IN	Key scanning
35	P41	IN	Key scanning
36	P40	IN	Key scanning
37	P17 (ACIN)	IN	60Hz AC input (for timer)
38	P16 (SD)	IN	SYNC. detection
39	P15 (VOB)	OUT	On-screen (background)
40	P14 (VOW3)	OUT	On-screen (B)
41	P13 (VOW2)	OUT	On-screen (G)
42	P12 (VOW1)	OUT	On-screen (R)
43	P11 (TCI0)	IN	COMPULINK
45	P66	OUT	AGC MUTE
47	P64	OUT	POWER ON / OFF
49	P62	OUT	Memory C3
50	P61	OUT	Memory C2
51	P60	OUT	Memory C1
52	RST	IN	RESET
53	P06, RMIN	IN	Remote control signal
54	H. SYNC	IN	H. sync. signal
55	V. SYNC	IN	V. sync. signal
56	P04, IRQ0	IN	Power suspension detection
58	P02 (/SBT1)	IN	COMPULINK detection

•FRONT AND REMOCON KEY

Key groups which are operable on either the remote control unit or front panel of the TV set are listed below.

FUNCTION	FRONT KEY	REMOCON KEY
TEN KEY	×	○
CHANNEL UP / DOWN	○	○
VOLUME UP / DOWN	○	○
POWER ON / OFF	○	○
MUTE ON / OFF	×	○
TV / VIDEO	○	○
MAIN / SPA	○	○
DISPLAY	×	○
RETURN	×	○
ANT / CABLE	○	○
CHOICE LIST	×	○
AV STATUS / RESET	×	○
MENU	×	○
FUNCTION UP / DOWN	○	○
LEVEL + / -	○	○
100+	×	○
FRONT FUNCTION	○	×
FRONT LEVEL + / -	○	×

○ : Operable
× : Inoperable

•REQUIREMENTS FOR OPERABILITY OF KEYS

MODE / KEY	POWER OFF	TV MODE	VIDEO MODE
TEN KEY	×	○	○
100+	×	○	○
CHANNEL UP / DOWN	×	○	△
VOLUME UP / DOWN	×	○	○
MUTE ON / OFF	×	○	○
POWER ON / OFF	○	○	○
TV / VIDEO	×	○	○
MAIN / SPA	×	○	×
DISPLAY	×	○	○
RETURN	×	○	△
ANT / CABLE	×	○	△
CHOICE LIST	×	○	○
AV STATUS / RESET	×	○	○
MENU	×	○	○
FUNCTION UP / DOWN	×	○	○
LEVEL + / -	×	○	○
FRONT FUNCTION	×	○	○
FRONT LEVEL + / -	×	○	○

○ : Operable
× : Inoperable
△ : The same opereble as TV / VIDEO KEY

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

■ REMOVING THE REAR COVER

1. Unplug the power supply cord and remove the eleven screws marked Ⓐ shown in Fig. 1
* When reinstalling the rear cover, carefully push it inward after inserting the main board into the rear cover groove.

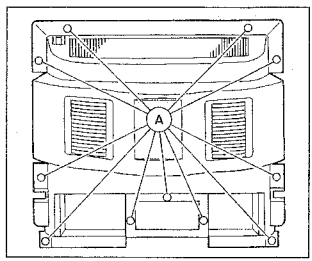


Fig. 1

■ REMOVING THE MAIN PW BOARD ASS'Y

1. As shown in Fig. 2, slide and pull out the board in the direction of arrow. (If necessary, take off the wire clamp and connectors.)
* When conducting a check with power supplied, be sure to confirm that the CRT earth wire is connected to the CRT socket PW board and the MAIN PW board.

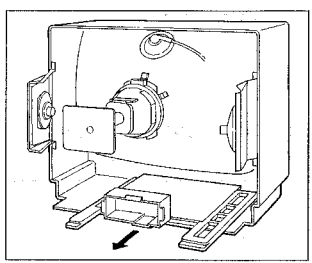


Fig. 2

■ SETTING UP CHASSIS FOR CHEK & REPAIR

1. As shown in Fig.3,set the removed chassis upright.
* When conducting a check with power supplied, be sure to confirm that the CRT earth wire is connected to the CRT socket board and the chassis..

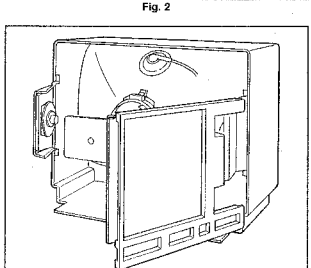


Fig. 3

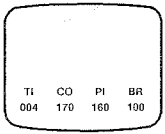
■ WIRE CLAMPING AND CABLE TIES

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together.Should it be inadvertently removed, be sure to tie the wires with a new cable tie

SERVICE ADJUSTMENTS

■ PRIOR TO STARTING ADJUSTMENT

- Allow set and test equipment to warm up fully before adjusting.
- Confirm proper AC 120V power supply input.
- Set BRIGHT, PICTURE, COLOR, etc. AV STATUS to standard settings.
- Use care not to disturb controls other than those mentioned in the adjustment steps.
- Unless otherwise mentioned, use a reception signal that provides the optimum picture for adjustment.
- After removing the rear cover, turn VSM SERVICE SW (S701) to the S side, then set the respective values as shown below using FUNCTION KEY of the remote control unit.



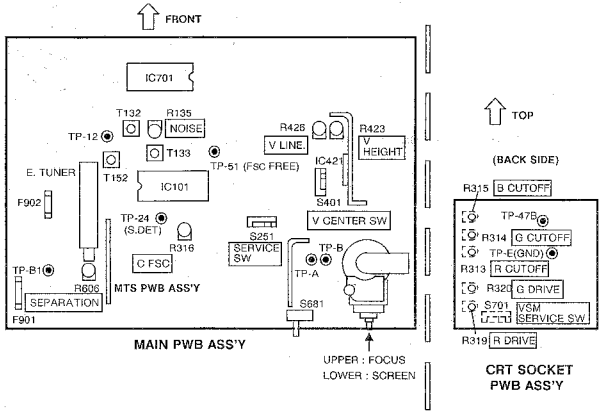
(Upon completion of this setting, return the S701 to the N side.)

■ TOOLS AND FIXTURES FOR ADJUSTMENT

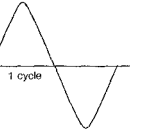
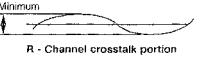
●MEASURING INSTRUMENTS

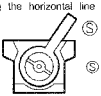
1. DC voltmeter (Digital DC voltmeter)
2. Oscilloscope
3. Pattern generator (NTSC type)
4. TV multichannel sound generator
5. Remote control unit (RM-C424)

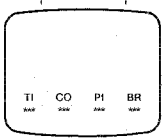
■ ADJUSTMENT LOCATIONS



■ ADJUSTMENT PROCEDURE

Item	Measuring instrument	Test point	Adjustment part	Description
•MAIN CIRCUIT				
B1 POWER SUPPLY check	DC voltmeter	TP-91 TP-E (⊥)		1. Confirm that the voltage between **TP-91** and **TP-E** (⊥) is **DC 129.3V ± 1.5V.**
NOISE (RF AGC) adjustment			NOISE VR (R135)	1. Adjust the **NOISE VR** so that the noise appears in the picture. 2. Next the **NOISE VR** in a direction that the noise disappears from the picture and stop at the point where the noise has disappeared from the picture. 3. Turn to another channel and confirm that there are no abnormal ities.
COLOR SYNC. adjustment	Pattern generator Oscilloscope	TP-51 (Fsc FREE) ⑯ pin of IC101 (9V line)	C FSC. VR (R316)	1. Receive the color bar signal. 2. Use ashorting clip or other means to connect **TP-51** and ⑯ pin (9V line) of IC101. 3. Adjust the **C FSC. VR** to change the picture from color stripes to still color bar. 4. Remove the connections and check that the color synchronization does not deteriorate on any of the channels.
SEPARATION adjustment	TV multi channel sound generator Oscilloscope	VARIABLE AUDIO OUTPUT L & R	SEPARATION VR (R606)	1. Set the TV multichannel sound signal generator for generating stereo signal and output signal of about 3kHz from the left channel. 2. Connect an oscilloscope to the "L" output and obtain a clear view of 1-cycle portion of 3kHz waveforms. 3. Change connection of the oscilloscope to the "R" output and expand the voltage axis. 4. Adjust the **SEPARATION VR** and minimize the 3kHz crosstalk portion.  **L - Channel signal waveform**  **R - Channel crosstalk portion**
FOCUS adjustment			FOCUS VR (built in FBT)	1. Adjust the **FOCUS VR** to obtain clear pictures. 2. Check that pictures have been adjusted to optimum appearance in both center and peripheral areas of the screen.

Item	Measuring instrument	Test point	Adjustment part	Description
BRIGHT adjustment	Remote control unit		SUB BRIGHT	1. By pressing AV STATUS / RESET button of the remote control unit, reset the respective functions (TINT, COLOR, PICTURE, BRIGHT, DETAIL) 2. Turn VSM SERVICE SW (S701) to the S side. 3. Select BR(BRIGHT) adjustment mode using FUNCTION KEY of the remote control unit and obtain an optimum brightness using the adjusting (+/-) key. 4. After adjustment , return VSM SERVICE SW (S701) to the N side. • Avoid excessive brightness.
PICTURE adjustment	Remote control unit		SUB PICTURE	1. By pressing AV STATUS / RESET button of the remote control unit, reset the respective functions (TINT, COLOR, PICTURE, BRIGHT, DETAIL) 2. Turn VSM SERVICE SW(S701) to the S side. 3. Select PI(PICTURE) adjustment mode using FUNCTION KEY of the remote control unit and obtain an optimum contrast using the adjusting (+/-) key. 4. After adjustment , return VSM SERVICE SW (S701) to the N side.
VERTICAL HEIGHT & LINEARITY adjustment	Pattren generator		V. HEIGHT VR (R423) V. LINE. VR (R426)	1. Receive a picture that enable s vertical symmetry to be checked. 2. Turn the **V HEIGHT VR** to compress the picture vertically. 3. Adjust the **V LINE. VR** to where the picture is symmetrical top and bottom. 4. Again adjust the **V HEIGHT VR** to return the normal height.
TINT & COLOR adjustment	Remote control unit		SUB TINT SUB COLOR	1. By pressing AV STATUS / RESET button of the remote control unit, reset the respective functions (TINT, COLOR, PICTURE, BRIGHT, DETAIL) 2. Turn VSM SERVICE SW (S701) to the S side. 3. Select the **TINT** and **COLOR** controls with the remote control unit function keys. Use the +/- keys to adjust for the most natural color. 4. After adjustment , return VSM SERVICE SW (S701) to the N side.
HORIZONTAL LINE display			SERVICE SW (S251)	1. Turning the **SERVICE SW** from the N side to the S side will bring the horizontal line display to the screen.  Ⓝ : normal picture Ⓢ : will appear a H line < Rear cover side >



•MULTI-CHANNEL SOUND CIRCUIT

• Do not touch the VRs inside the MTS PWB ASS'Y.

•HOW TO CHECK THE HIGH VOLTAGE HOLD DOWN CIRCUIT

1. High voltage hold down circuit

After repair of the high voltage hold down circuit shown in Fig. 1, this circuit shall be checked to operate correctly.

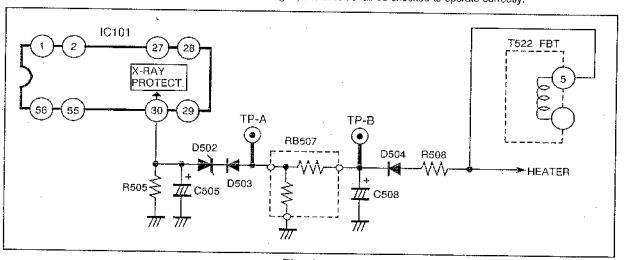


Fig. 1

2. Checking method of the high voltage hold down circuit

(1) Mask sure thar the POWER switch is at OFF.
(2) Shown in Fig. 2, set the resistor 15.8kΩ 1/4W to RB507 (between TP-A and TP-B).
(3) Turn the POWER switch ON.
(4) Mask sure that the screen picture disappears.
(5) Tuen the POWER switch OFF.
(6) Remove the resistor 15.8kΩ 1/4W from RB507 (between TP-A and TP-B).

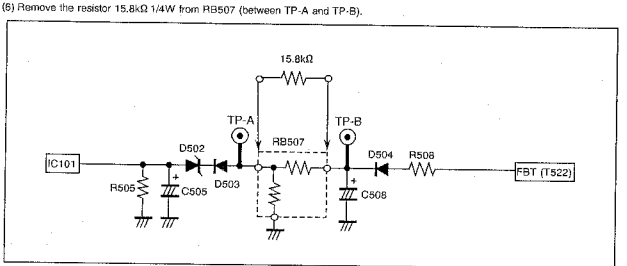


Fig. 2

■ PURITY, CONVERGENCE AND WHITE BALANCE ADJUSTMENTS

* The locations of SERVICE SWITCH, SCREEN VR, CUT-OFF VR and DRIVE VR are described in the ALIGNMENT LOCATION of SERVICE ADJUSTMENT or the SCHEMATIC DIAGRAM.

•PICTURE TUBE

The picture tube is a precision in-line gun type. For this picture tube, dynamic convergence is carried out by a precision deflection yoke which eliminated the use of convergence yoke and convergence circuit. The adjustment of picture tube is therefore made easier as only the adjustment of static convergence by using a magnetic is enough. The deflection yoke and purity/convergency magnets assembly has been set at the factory and requires no field adjustments. However, should the assembly be accidentally jarred or tampered with, some or all adjustments may by necessary.

•COLOR PURITY & VERTICAL CENTER

Loosen yoke retaining screw (Fig. B-1) . With a sharp knife cut between the picture tube and the wedge. Remove wedges completely and clean off dried adhesive from the picture tube. PAINT is used to lock the tabs of the purity/convergance magnet assembly in place (Fig. B-1) . The paint must be removed with the end of a screwdriver before any adjustments are attempted.

(As to models equipped with a magnet locking ring, beforehand loosen it.)

1. Select no signal UHF channel. (or Display a monochrome pattern)
2. Let the purity tabs come in line horizontally as is shown in Fig. B-2. A long tab should be in the same direction as the other short tab.
3. Move the yoke slowly backward.
4. Turn the GREEN CUT-OFF VR to maximum and the RED and BLUE CUT-OFF VRs to minimum. Then adjust the SCREEN VR so that the green band can be seen best. (Fig. B-3)
5. Rotate the two tabs in the opposite directions and with them kept at an angle, together in either direction so that the green band is centered on the picture tube.
6. Check the vertical center position by displaying a horizontal line. (Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.) Unless correct, bring it to the nearest center by rotating the two tabs, kept at an angle, together in either direction. (Fig. B-4)
7. Repeat steps 5 and 6 alternately until the green band and the vertical center come to the center.
8. Move the yoke slowly towards the bell of the tube so that the whole surface of the picture tube is filled with a green pure raster.
9. Turning RED or BLUE CUT-OFF VR to maximum and GREEN CUT-OFF VR to minimum, make sure of a red or blue pure raster.
10. Secure yoke retaining screw (do not install wedges at this time) .

(As to models equipped with a magnet locking ring, secure it and keep six magnets from moving even if it is touched slighly.)

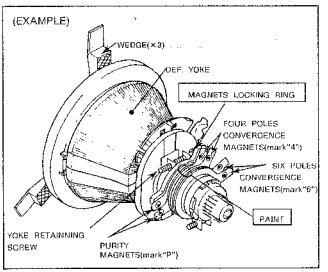


Fig.B-1

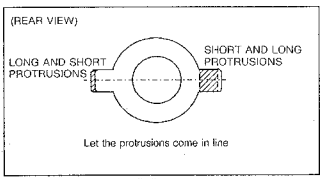


Fig.B-2

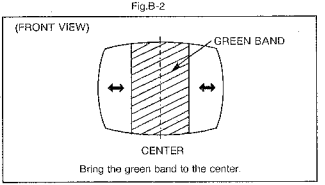


Fig.B-3

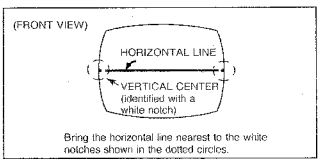

(FRONT VIEW)
HORIZONTAL LINE
VERTICAL CENTER
(identified with a white notch)
Bring the horizontal line nearest to the white notches shown in the dotted circles.

Fig.B-4

•STATIC CONVERGENCE & DYNAMIC CONVERGENCE

1. Connect a crosshatch generator to the input terminals and adjust BRIGHTNESS and CONTRAST control for a distinct pattern.
2. Adjust the convergence around the edges of the picture tube by tilting the yoke, up-down and left-right, and temporarily install one wedge at the top of the yoke. (Fig. B-7, 8, 9)
3. Rotate the front pair of tabs (four pole convergence magnet) as a unit to minimize the separation of the red and blue lines around the center of the screen. To adjust the convergence of red and blue, vary the angle between the tabs (Fig. B-5)
4. Rotate the rear pair of tabs (six pole convergence magnets) as a unit to minimize the separation of the magenta (R/B) and green lines. (Fig. B-6)
5. Adjust the spacing of the rear tabs to converge the magenta and green lines.
6. Apply paint to fix six magnets.
   (As to models equipped with a magnet locking ring, tighten it.)
7. Remove the wedge installed temporarily on the yoke.
8. Tilting the angle of the yoke up, down and sideways, and adjust the yoke so as to obtain the circumference convergence. (Fig. B-8, 9)
9. Insert wedges to the position as shown in Fig. B-10 to obtain the best circumference convergence.
10. Wedge has a backing of double sided adhesive tape. Therefor, tear off one side of adhesive tape, and fix the wedges.
11. White balance adjustment (Black & White tracking) can now be performed.

•WHITE BALANCE ADJUSTMENT

(Black and White Tracking)

1. Display a monochrome pattern.
2. Set the RED and GREEN DRIVE VRs for their mechanical center.
3. Turn the RED, GREEN and BLUE CUT-OFF VRs and the SCREEN VR fully counterclockwise.
4. Display a horizontal line. (Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.)
5. Turn SCREEN VR slowly clockwise until a very faint horizontal line appears.
6. Turn the CUT-OFF VR of the color which has appeared first, clockwise by about 10°and then adjust the SCREEN VR again so that the color may shine faintly.
7. Turn the other color CUT-OFF VRs slowly clockwise until a reasonable white line appears.
8. Return the monochrome pattern. (When returning a monochrome pattern select the CUT-OFF SERVICE SWITCH from S to N and a monochrome pattern will appear.)
9. Adjust the RED and GREEN DRIVE VRs for best white highlights.

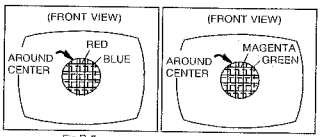


Fig.B-5 Fig.B-6

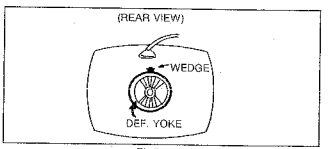


Fig.B-7

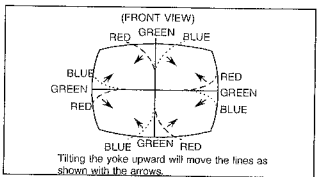


Fig.B-8

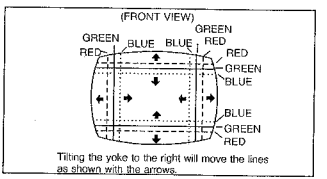


Fig.B-9

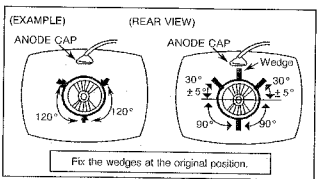


Fig.B-10

PARTS LIST

CAUTION

- The parts marked ⚠ are very important for the safety. When replacing these parts, be sure to use specified ones to secure the safety and performance.
- The module circuit board is supplied together with the assembly, but the parts which do not have the drawing in this Parts List, P. C. Board Ass'y and the Parts No. columns of which are filled with lines ----- , will not be supplied.
- As a rule, the resistors and capacitors which are indicated as shown in (NOTE 2) "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" are not shown in the list of the parts on the board.
  When ordering the service parts, confirm the resistance/rated power, capacitance/rated voltage, and type of the parts, then order by the part No. indicated according to (NOTE 2).

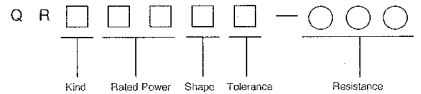
(NOTE 1) ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% - 10%	+50% - 10%	+80% - 20%	+100% - 0%

(NOTE 2) HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS

■ RESISTOR



Symbol	Part Name
C	COMP.R
D	C R
S	CH MG R

Symbol	Rated Power
0 1	1 w
1 2	1/2 w
1 4	1/4 w
1 6	1/6 w
1 8	1/8 w

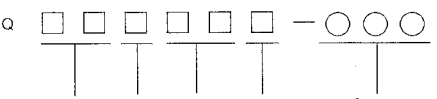
Symbol	Shape
1	Straight lead
8	Chip

Indicate with first two-figure expressed by Ω and following 0.
please note that,in case of resistance less than 10 Ω, a letter "R"will be effective as point.

EX.

2.2 Ω	=		2R2
470 Ω	= 47×10^{1}	→	471
150kΩ	= 15×10^{4}	→	154

■ CAPACITOR



Symbol	Part Name
CS	C CAP.
CS	CH C CAP.
ET	E CAP.
FM	M CAP.

5Figure / 6Figure	0	1	2
A		10V	100V
C		16V	160V
D			200V
E		25V	250V
H		50V	500V
J	6.3V	63V	
V		35V	

Indicate with first two-figure expressed by pF and following 0.
Please note that,in case of capacitance less than 10 pF a letter "R" will be effective as point.

EX

5pF	=		5R0
1000pF	= 10×10^{2}	→	102
47μF	= 47×10^{6}	→	476

Symbol	Shape
1	Straight lead
1	Leads in the same direction
8	Chip
A	Leads in the same direction (compact part)

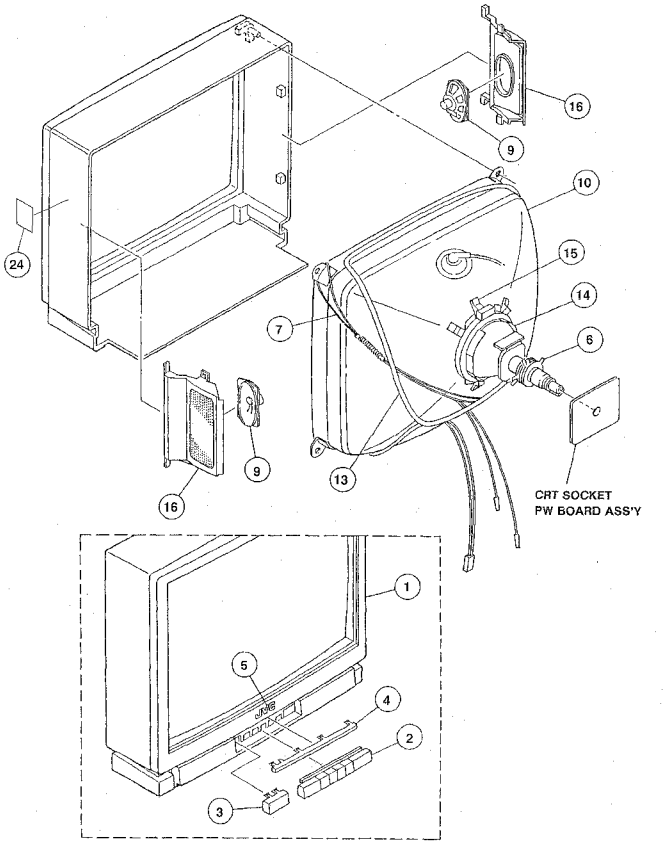
USING PW BOARD ASS'Y No.

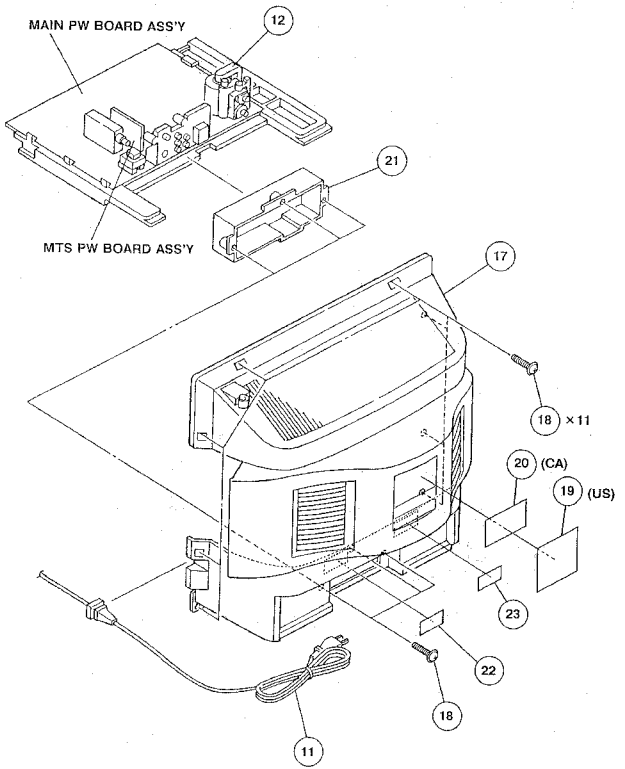
Model / PWB ASS'Y	America Models (US)	Canada Models (CA)
	AV-27BM3 (US) AV-27CM3 (US)	AV-27CM3 (CA)
MAIN PWB ASS'Y	SGY1005A(H1)	SGY1505A(H2)
CRT SOCKET PWB ASS'Y	SGY3005A(H1)	SGY3005A(H2)
MTS PWB ASS'Y	SGY6002A(H1)	SGY6002A(H2)

EXPLODED VIEW PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	CM11579-00F-MA	FRONT CABI ASS'Y	(AV-27BM3)	*
	1	CM11579-00E-MA	FRONT CABI ASS'Y	(AV-27CM3)	*
	2	CM33706-C0A-KD	PUSH KNOB		
	3	CM45810-A01-V0	REMOCON WINDOW		
	4	CM33705-003-V0	KNOB HOLDER		
	5	CM43094-002	JVC MARK		
	6	A75034-B	PC.MAGNET		
	7	CHGB0003-0A-GA	BRAIDED ASS'Y		*
⚠	9	CEBSN12D-01KJ3	SPEAKER	×2 SP01,SP02	*
⚠	10	MVA68AEW01X	PICTURE TUBE	V01	*
⚠	11	QMP14C0-200J3	POWER CORD		*
⚠	12	CE42211-00B-KD	FBT	T1522	*
⚠	13	CE41329-00CJ2	DEG.COIL	L01	*
⚠	14	CE20240-A0AKJ1	DEF YOKE	DY01	*
	15	CE41596-00AJ1	WEDGE ASSY	×4	*
	16	CM11606-A01-VA	SPEAKER GRILLE		*
	17	CM11548-B61-MA	REAR COVER		*
	18	GBSB4016N	TAPPING SCREW	×11	*
	19	CM44889-001-A	RATING LABEL	(US)	*
	20	CM20926-011-A	RATING LABEL	(CA)	*
	21	CM22209-B01-VA	TERMINAL ADP		*
	22	CM47144-001-A	SP WARNING LABEL		*
	23	CM47663-001	HYATT LABEL		
	24	CM35138-008	WARNING LABEL	(US)	
	24	CM47068-008	WARNING LABEL	(CA)	

EXPLODED VIEW




MAIN PW BOARD ASS'Y
12
21
MTS PW BOARD ASS'Y
17
18 ×11
20 (CA)
19 (US)
23
22
18
11

PRINTED WIRING BOARD PARTS LIST

Regarding the Main P.W.Board Ass'y [SGY1505A(H2)] of the model for Canada, refor to Page24.

MAIN PW BOARD Ass'y [SGY1005A(H1)] [US]

⚠ Symbol No.	Part No.	Part Name	Description	Local
VARIABLE RESISTOR				
R1135	QVPE610-502H	TRIM.R(NOISE)	5kΩ B	
R1318	QVPE610-103H	TRIM.R(COLOR SYNC.)	10kΩ B	
R1423	QVPE610-503H	TRIM.R(V HEIGHT)	50kΩ B	
R1426	QVPE610-203H	TRIM.R(V LINE.)	50kΩ B	
R1606	QVPA601-223A	V R(SEPARATOR)	22kΩ B	
RESISTOR				
R1201	QRG019J-330S	OM R	33 Ω 1W J	
R1251	QRD123J-391SX	C R	390 Ω 1/2W J	
R1355-56	QRV141F-100ZAY	MF R	10k Ω 1/4W F	
R1424	QRX019J-1R2S	MF R	1.2 Ω 1W J	
⚠ R1429	QRD161J-5R6Y	C R	5.6 Ω 1/8W J	
⚠ R1430	QRC121K-331Z	COMP.R	330 Ω 1/2W K	
⚠ R1438	QRD121J-821SY	C R	820 Ω 1/2W J	
R1501	QRG029J-271A	OM R	270 Ω 2W J	
⚠ R1508	QRD129J-4R7S	C R	4.7 Ω 1/2W J	
R1525	QRG029J-101A	OM R	100 Ω 2W J	
⚠ R1526	QRG029J-680A	OM R	68 Ω 2W J	
⚠ R1528	QRG019J-391S	OM R	390 Ω 1W J	
⚠ R1529	QRG039J-152A	OM R	1.5k Ω 3W J	
⚠ R1531	QRX029J-2R7A	MF R	2.7 Ω 2W ±5%	
⚠ R1533	QRX039J-2R7A	MF R	2.7 Ω 3W ±5%	
⚠ R1534	QRX039J-2R2A	MF R	2.2 Ω 3W ±5%	
⚠ R1536	QRD149J-1R0S	C R	1.0 Ω 1/4W J	
⚠ R1538	QRX039J-2R2A	MF R	2.2 Ω 3W ±5%	
⚠ R1540	QRD121J-102SY	C R	1k Ω 1/2W J	
⚠ R1551	QRX039J-2R2A	MF R	2.2 Ω 3W ±5%	
⚠ R1601	QRD161J-331Y	C R	330 Ω 1/8W J	
R1702-93	QRD123J-271SX	C R	270 Ω 1/2W J	
⚠ R1901	QRF074K-1R8	UNF R	1.8 Ω 7W ±5%	
⚠ R1904	QRD121J-822SY	C R	8.2k Ω 1/2W J	
⚠ R1905	QRF308K-161	UNF R	160 Ω 30W K	
⚠ R1907	QRF054K-4R7	UNF R	4.7 Ω 5W ±10%	
⚠ R1908	QRD141J-391SY	C R	390 Ω 1/4W J	
R1925	QRG019J-101S	OM R	100 Ω 1W J	
⚠ R1999	QRC121K-275EZ	COMP.R	2.7MΩ 1/2W K	
⚠ RB1507	QRZ0091-009	NET R		
CAPACITOR				
C1003	QEM41CM-477M	E CAP.	470 μF 16V M	
C1133	QFLC1HJ-393MZ	M CAP.	0.039 μF 50V J	
C1134	QCT25CH-330AZ	C CAP.	33 pF 50V J	
C1135	QCT25CH-121AZ	C CAP.	120 pF 50V J	
C1138	QCT25RH-270AZ	C CAP.	27 pF 50V J	
C1157	QEN61CM-108Z	BP E CAP.	10 μF 16V M	
C1204	QEN61HM-105Z	BP E CAP.	1 μF 50V M	
C1305	QFLC1HK-223MZ	M CAP.	0.022 μF 50V K	
C1317	QFLC1HK-103MZ	M CAP.	0.01 μF 50V K	
C1401	QEN61HM-105Z	BP E CAP.	1 μF 50V M	
C1422	QFV71HJ-105MZ	TF CAP.	1 μF 50V J	
C1424	QFV71HJ-334MZ	TF CAP.	0.33 μF 50V J	
⚠ C1426	QEHC1VM-107MZ	E CAP.	100 μF 35V M	
C1428	QFLC2AK-333MZ	M CAP.	0.033 μF 100V K	
⚠ C1429	QCS31HJ-3R0AZ	CH C CAP.	3 pF 50V J	
⚠ C1430	QETC1VM-477Z	E CAP.	470 μF 35V M	
C1431	QFLC1HK-332MZ	M CAP.	3300 pF 50V K	
C1433	QFLC1HK-103MZ	M CAP.	0.01 μF 50V K	
⚠ C1508	QETC1VM-107Z	E CAP.	100 μF 35V M	
C1523	QEHC1HM-106MZ	E CAP.	10 μF 50V M	
⚠ C1524	QFZ0081-6601S	MPP CAP.	66 pF 1600V ±3%	
⚠ C1526	QFZ0081-6601S	MPP CAP.	66 pF 1600V ±3%	
⚠ C1528	QFZ0120-374S	MPP CAP.	0.37 μF 200V ±3%	
⚠ C1530	QET62CR-227	E CAP.	220 μF 160V R	

⚠ Symbol No.	Part No.	Part Name	Description	Local
CAPACITOR				
⚠ C1533	QEHC1EM-477MZ	E CAP.	470μF 25V M	
⚠ C1534	QETB1VM-108	E CAP.	1000μF 35V M	
⚠ C1535	QCY32HK-102A	CH C CAP.	1000pF 500V K	
⚠ C1536	QET62ER-106Z	E CAP.	10μF 250V R	
⚠ C1640	QFV71HJ-104MZ	TF CAP.	0.1μF 50V J	
C1642	QFLC1HK-103MZ	M CAP.	0.01μF 50V K	
C1643	QFLC1HK-822MZ	M CAP.	8200pF 50V K	
C1644	QFLC1HK-562MZ	M CAP.	5600pF 50V K	
C1645	QFV71HJ-104MZ	TF CAP.	0.1μF 50V J	
C1651	QETB1EM-228	E CAP.	2200μF 25V M	
C1653	QFLC1HK-472MZ	M CAP.	4700pF 50V K	
C1654	QFV71HJ-124MZ	TF CAP.	0.12μF 50V J	
C1659	QFV71HJ-124MZ	TF CAP.	0.12μF 50V J	
C1660	QFLC1HK-472MZ	M CAP.	4700pF 50V K	
C1684	QFLC1HJ-823MZ	M CAP.	0.082μF 50V J	
C1688	QFLC1HJ-823MZ	M CAP.	0.082μF 50V J	
C1690-91	QFV71HJ-104MZ	TF CAP.	0.1μF 50V J	
C1703	QFLC1HJ-333MZ	M CAP.	0.033μF 50V J	
C1704	QEKC1HM-104GMZ	F CAP.	0.1μF 50V M	
C1710-11	CECN004-102	NET CAP.	1000pF 50V K	
C1736	CECN003-101	NET CAP.	100pF 50V K	
C1758	QFLC1HK-562MZ	M CAP.	5600pF 50V K	
C1792	QEHC1VM-336MZ	E CAP.	33μF 35V M	
C1809	QEN61CM-106Z	BP E CAP.	10μF 16V M	
C1812	QEN61CM-106Z	BP E CAP.	10μF 16V M	
C1852	QEN61CM-336Z	BP E CAP.	33μF 16V M	
⚠ C1901	QCZ9034-472A	C CAP.	4700pF AC125V P	
⚠ C1902	QCZ9034-472A	C CAP.	4700pF AC125V P	
⚠ C1903	QCZ9034-472A	C CAP.	4700pF AC125V P	
⚠ C1904	QEZ0145-567R	E CAP.	560μF	
C1905	QEHC2CM-106MZ	E CAP.	10μF 160V M	
⚠ C1907	QFZ9025-104M	MF CAP.	0.1μF AC125V M	
⚠ C1908	QFZ9025-104M	MF CAP.	0.1μF AC125V M	
⚠ C1998	QCZ9029-103M	C CAP.	0.01μF AC125V M	
⚠ C1999	QCZ9029-103M	C CAP.	0.01μF AC125V M	
TRANSFORMER				
T1132	CE40123-400	AFC TRANSFORMER		
T1133	CELT001-208	C.WAVE.TRANSF.		
T1152	CELT003-104	S.I.F.TRANSF.		
⚠ T1521	CE41970-002	DRIVE TRANSF.		
⚠ T1901	CE41993-001	POWER TRANSF.		
COIL				
L1101	CELP043-R39	PEAKING COIL	0.39μH	
L1102	CELP043-R68	PEAKING COIL	0.68μH	
L1112	CELP043-R47	PEAKING COIL	0.47μH	
L1121	CELP026-680Z	PEAKING COIL	680μH	
L1131	CELP041-R82	PEAKING COIL	0.82μH	
L1151	CELP026-680Z	PEAKING COIL	680μH	
L1161	CELP042-1R0	PEAKING COIL	1μH	
L1162	CELP026-220Z	PEAKING COIL	220μH	
L1201	CELP026-150Z	PEAKING COIL	150μH	
L1251	CELP026-330	PEAKING COIL	330μH	
L1522	CE40107-001	CORD SLEEVE		
⚠ L1523	CELL004-001	LINIARITY COIL		
L1751	CELP026-180Z	PEAKING COIL	180μH	
L1761	CELP026-1R0Z	PEAKING COIL	1μH	
L1855	CELP026-820	PEAKING COIL	820μH	
DIODE				
D1001	MA4330(M)-T2	ZENER DIODE		
D1133-34	1SS133-T2	SI.DIODE		
D1201	RD7.5ES(B2)-T2	ZENER DIODE		
D1202-04	1SS133-T2	SI.DIODE		
D1222-23	1SS133-T2	SI.DIODE		
D1251	MA4150(M)-T2	ZENER DIODE		
D1321-28	1SS133-T2	SI.DIODE		

⚠	Symbol No.	Part No.	Part Name	Description	Local
	D I O D E				
⚠	D1421	1SR35-100A-T2	SI.DIODE		
⚠	D1425	06AZ7B	ZENER DIODE		
	D1501	MA4068(M)-T2	ZENER DIODE		
⚠	D1502	MA4068(M)C1-T2	ZENER DIODE		
⚠	D1503	1SS81-T5	SI.DIODE		
⚠	D1504	1SS81-T2	SI.DIODE		
⚠	D1505	1N4003-T3	SI.DIODE		
	D1506	MA4075(M)-T2	ZENER DIODE		
⚠	D1521	RU4DS-C1	SI.DIODE		
⚠	D1531	1SR35-100A-T2	SI.DIODE		
⚠	D1533	RU3AM-LFC4	SI.DIODE		
⚠	D1534	RGP10J-T3	SI.DIODE		
⚠	D1536	RH1S-T3	SI.DIODE		
	D1540	1SS81-T2	SI.DIODE		
	D1543	DFA1A4-T3	SI.DIODE		
⚠	D1551	DFA1A4-T3	SI.DIODE		
	D1601	MA4100(M)-T2	ZENER DIODE		
	D1631-32	1SS133-T2	SI.DIODE		
	D1650-54	1SS133-T2	SI.DIODE		
	D1721-25	1SS133-T2	SI.DIODE		
	D1730-32	1SS133-T2	SI.DIODE		
	D1734	1SS133-T2	SI.DIODE		
	D1738	1SS133-T2	SI.DIODE		
	D1761-62	1SS133-T2	SI.DIODE		
	D1763	SEL1210S	L.E.D.(RED)		
	D1764	1SS133-T2	SI.DIODE		
	D1772-74	1SS133-T2	SI.DIODE		
	D1778-79	1SS133-T2	SI.DIODE		
	D1794	MA4062(H)-T2	ZENER DIODE		
	D1795-96	1SS133-T2	SI.DIODE		
	D1801	MA4120(M)-T2	ZENER DIODE		
	D1851	MA4120(M)-T2	ZENER DIODE		
⚠	D1901	1S1887A	SI.DIODE		
⚠	D1902	1S1887A	SI.DIODE		
⚠	D1903	1S1887A	SI.DIODE		
⚠	D1904	1S1887A	SI.DIODE		
⚠	D1906	1S1887A-T3	SI.DIODE		
	D1921	1SS133-T2	SI.DIODE		
	D1925	1N4003-T3	SI.DIODE		
	D1961	S1WB(A)10	SI.DIODE		
	T R A N S I S T O R				
	Q1101	2SC1360-C1	SI.TRANSISTOR		
	Q1111	2SC1360-C1	SI.TRANSISTOR		
	Q1201-02	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1221	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1251	2SA933S(QR)-T	SI.TRANSISTOR		
	Q1252-53	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1301	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1401	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1423	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1521	2SC2655(Y)-T	SI.TRANSISTOR		
⚠	Q1622	2SD1554-C1	POWER TRANSISTOR	H.OUT	
⚠	Q1601	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1602	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1621-22	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1623	2SA933S(QR)-T	SI.TRANSISTOR		
	Q1624	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1636	2SA933S(QR)-T	SI.TRANSISTOR		
	Q1637	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1651-52	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1701	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1751-52	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1761	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1775	2SC1740S(QR)-T	SI.TRANSISTOR		

⚠	Symbol No.	Part No.	Part Name	Description	Local
	TRANSISTOR				
	Q1778-79	2SB774(RS)-T	SI.TRANSISTOR		
	Q1781-82	2SA933S(QR)-T	SI.TRANSISTOR		
	Q1791	2SC3619	SI.TRANSISTOR		
	Q1801-02	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1851	2SA933S(QR)-T	SI.TRANSISTOR		
	Q1871	2SA933S(QR)-T	SI.TRANSISTOR		
	Q1881	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1824	2SA933S(QR)-T	SI.TRANSISTOR		
	Q1826	2SC1959(OYG)	SI.TRANSISTOR		
	IC				
	IC1001	TA78L005AP-Y	I.C.(H)	5V REGULATOR	
	IC1101	TA8725AN	I.C.		
	IC1121	TA78L009AP-Y	I.C.	9V REGULATOR	
⚠	IC1421	LA7839	I.C.(MONO-ANA)	V.OUT	
⚠	IC1422	TA78L012AP-Y	I.C.(MONO-ANA)	12V REGULATOR	
	IC1651	TA7630P	I.C.(M)	SOUND CONTROL	
⚠	IC1661	LA4261	I.C.(MONO-ANA)	AUDIO POWER AMP	
	IC1701	MN1872013JGK2	I.C.	MICRO PROCESSOR	
	IC1702	MN1280-K	I.C.(DIGI-MOS)	RESET	
	IC1703	GP1U721Q	IFR DETECT UNIT		
	IC1704	MN12C2610	I.C.(MEMORY-OTH)		
	IC1801	M51320P	I.C.	TV/V SWITCH	
	IC1851	LA7222	I.C.	V/S SWITCH	
⚠	IC1901	STR30130	I.C.(H)		
	OTHERS				
		CM34947-00A-VH	A/V TERMINAL		
	CF1161	SFS4.5MC	CERAMIC FILTER		
	CF1201	CE41605-001	CERAMIC FILTER		
	CF1501	CSB503F30	CER.RESONATOR		
	CF1701	CST4.00MGW	CER.RESONATOR		
	CN1891	CE42114-001	P.W.BOARD ASSY		
⚠	F1901	QMF86U1-5R0S	FUSE	5A 125V	
⚠	F1902	QMF53U1-1R25S	FUSE	1.25A 125V	
⚠	LF1901	CE42022-001J1	LINE FILTER		
⚠	RY1901	CESK019-001	RELAY		
	S1251	QSL6A13-C01	LEVER SWITCH	SERVICE SW	
	S1401	QSL6A13-C01	LEVER SWITCH	V.SENTER SW	
	S1681	QSS1F23-C07	SLIDE SWITCH	SPEAKER SELECT SW	
	S1701	QSP4H11-C03	PUSH SWITCH	FUNCTION	
	S1702	QSP4H11-C03	PUSH SWITCH	CH/LEVEL UP	
	S1703	QSP4H11-C03	PUSH SWITCH	CH/LEVEL DOWN	
	S1704	QSP4H11-C03	PUSH SWITCH	POWER	
	S1705	QSP4H11-C03	PUSH SWITCH	VOL △	
	S1706	QSP4H11-C03	PUSH SWITCH	VOL ▽	
	SF1101	CE42003-202	SAW FILTER		
⚠	TH1901	CEKP001-001	P.THERMISTOR		
	VA1909	ERZ-C10DK361U	ZINC N RESISTOR		
	X1301	CE40688-001	CRYSTAL		

MAIN PW BOARD ASS'Y [SGY1505A(H2)] [CA]

Regarding the parts list for the main P.W.Board Ass'y [SGY1505A(H2)] of the model for Canada , only the different parts from those of the model [SGY1005A(H1)] are described.

For further details regarding the other parts, refer to the parts list of the model [SGY1005A(H1)] described on Page 20 through Page 24.

⚠	SYMBOL No.	PART No. America Models SGY1005A(H1) [US]	PART No. Canada Models SGY1505A(H2) [CA]	PARTS NAME	REMARKS
⚠	TU1701	CEEK253-A02-M	CEEK254-A02-M	TUNER	
	D1732	1SS133-T2	————	SI. DIODE	Deleted
⚠	LF1901	CE42022-001J1	CE41506-00AJ1	LINE FILTER	

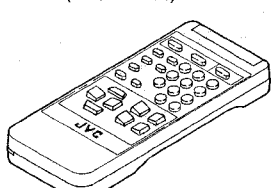
CRT SOCKET PW BOARD Ass'y [SGY3005A(H1)] (US) / [SGY3005A(H2)] (CA)

⚠	Symbol No.	Part No.	Part Name	Description	Local
	V A R I A B L E R E S I S T O R				
	R3313	QVPA803-502M	V R(R CUT OFF)	5kΩ B	
	R3314	QVPA803-502M	V R(G CUT OFF)	5kΩ B	
	R3315	QVPA803-502M	V R(B CUT OFF)	5kΩ B	
	R3319	QVPA803-201M	V R(R DRIVE)	200 Ω B	
	R3320	QVPA803-201M	V R(G DRIVE)	200 Ω B	
	R E S I S T O R				
⚠	R3305	QRG028J-123	OM R	12kΩ 2W J	
⚠	R3307	QRG028J-123	OM R	12kΩ 2W J	
⚠	R3309	QRG028J-123	OM R	12kΩ 2W J	
	R3326	QRC121K-152Z	COMP.R	1.5kΩ 1/2W K	
⚠	R3363	QRC121K-225EZ	COMP.R	2.2MΩ 1/2W K	
	C A P A C I T O R				
	C3361	QFH63BK-223M	MM CAP.	0.022μF 1250V K	
⚠	C3363	QET62ER-105	E CAP.	1μF 250V R	
	C O I L				
⚠	L3307	CJ30030-115	HEATER CHOKE		
	D I O D E				
	D1310-12	1SS133-T2	SI.DIODE		
	D3301	1SS133-T2	SI.DIODE		
	D3361	DFM1A4	SI.DIODE		
	T R A N S I S T O R				
	Q3301-03	2SC1740S(R)-T	SI.TRANSISTOR		
	Q3304	2SC3271(NP)-C1	SI.TRANSISTOR	R OUT	
	Q3305	2SC3271(NP)-C1	SI.TRANSISTOR	G OUT	
	Q3306	2SC3271(NP)-C1	SI.TRANSISTOR	B OUT	
	O T H E R S				
⚠		CE41603-002	CRT.SOCKET		
	S3701	QSL8A13-C01	LEVER SWITCH		

MTS PW BOARD Ass'y [SGY6002A(H1)] (US) / [SGY6002A(H2)] (CA)

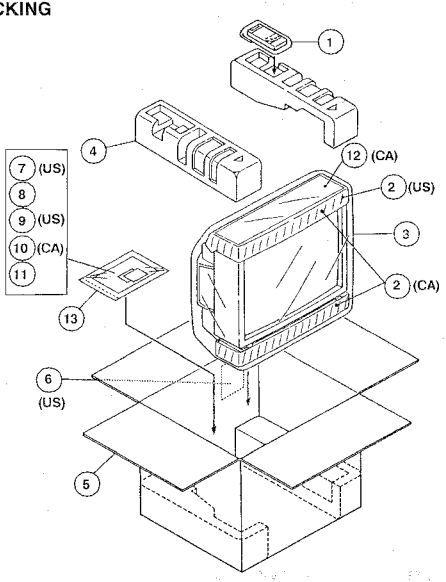
⚠ Symbol No.	Part No.	Part Name	Description			Local
VARIABLE RESISTOR						
R6626	QVPE604-103H	V R	10k Ω			
R6627	QVPE604-502H	V R	5k Ω			
R6628	QVPC609-303H	V R	30k Ω			
R6629	QVPC609-503H	V R	50k Ω			
RESISTOR						
R6603	QRV141F-4302AY	MF R	43k Ω	1/4W	F	
R6608	QRV141F-6201AY	MF R	6.2k Ω	1/4W	F	
R6609	QRV141F-3901AY	MF R	3.9k Ω	1/4W	F	
R6610-11	QRV141F-4702AY	MF R	47k Ω	1/4W	F	
CAPACITOR						
C6601	QEKC1HM-475GMZ	E CAP.	4.7 μF	50V	M	
C6602	QFLC1HK-123MZ	M CAP.	0.012 μF	50V	K	
C6603	QFLC1HK-562MZ	M CAP.	5600 pF	50V	K	
C6604	QEP61HM-474GMZ	BP E CAP.	0.47 μF	50V	M	
C6605	QEKC1CM-476MZ	E CAP.	47 μF	16V	M	
C6607	QFLC1HK-272MZ	M CAP.	2700 pF	50V	K	
C6608	QEKC1HM-475GMZ	E CAP.	4.7 μF	50V	M	
C6609	QEE61CK-106BZ	TAN.CAP.	10 μF	16V	K	
C6610	QEE61CK-335BZ	TAN.CAP.	3.3 μF	16V	K	
C6611	QEKC1HM-105GMZ	E CAP.	1 μF	50V	M	
C6612-13	QEKC1HM-475GMZ	E CAP.	4.7 μF	50V	M	
C6614	QFLC1HK-473MZ	M CAP.	0.047 μF	50V	K	
C6615-18	QEKC1HM-475GMZ	E CAP.	4.7 μF	50V	M	
TRANSISTOR						
Q6601-03	2SC2785(JH)-T	SI.TRANSISTOR				
IC						
IC6601	CXA1124BS	IC				

REMOTE CONTROL UNIT (RM-C424-KD1-T)



BATTERY COVER
FA11B8801

PACKING



PACKING PARTS LIST

⚠ Ref.No.	Part No.	Part Name	Description	Local
1	RM-C424-KD1-T	REMOCON UNIT		*
2	CP30056-001-A	TOP COVER	(US)	*
2	CP30056-001-A	TOP COVER	×2(CA)	*
3	CP30056-002-A	POLY BAG		*
4	CP10819-A0A-A	CUSHION ASS'Y	4pcs in 1set	*
6	CP10972-040-A	PACKING CASE	(AV-27BM3)	*
5	CP10972-039-A	PACKING CASE	(AV-27CM3)	*
6	CM31900-00A-A	REC KEEPING CARD	(US)	*
7	CM21229-B01	SAFETY TIPS	(US)	
8	BT-20113B-A	WARRANTY CARD	(US)	*
8	BT-20025K-A	WARRANTY CARD	(CA)	*
9	BT-20108A-A	SERVICE INF CARD	(US)	*
10	BT-20071A-A	SVC CENTER LIST	(CA)	*
11	26,27M3U-IBA-A	INST BOOK	(US)	*
11	26,27M3C-IBA-A	INST BOOK	(CA)	*
12	CP30341-001-A	PROTECT SHEET	(CA)	*
13	CM30751-010	POLY BAG		

AV-27BM3(US) / AV-27CM3(US&CA)
STANDARD CIRCUIT DIAGRAM

■NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal :Color bar signal
(2)Setting positions of each knob/button and variable resistor :Original setting position when shipped
(3)Internal resistance of tester :DC 20kΩ/V
(4)Oscilloscope sweeping time :H ⇒20μS/div
:V ⇒5mS/div
:Others ⇒ Sweeping time is specified
(5)Voltage values :All DC voltage values

* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL[EXAMPLE]

●In the P.C.board :R1209→R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

●Resistance value
No unit :[Ω]
K :[KΩ]
M :[MΩ]
●Rated allowable power
No indication :1/6[W]
Others :As specified
●Type
No indication :Carbon resistor
OMR :Oxide metal film resistor
MFR :Metal film resistor
MPR :Metal plate resistor
UNFR :Uninflammable resistor
FR :Fusible resistor

* Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

●Capacitance value
1or higher :[pF]
less than 1 :[μF]
●Withstand voltage
No indication :DC50[V]
Others :DC withstand voltage[V]
AC indicated :AC withstand voltage[V]

* Electrolytic Capacitors
47/50[Example]:Capacitance value[μF]/withstand voltage[V]

●Type
No indication :Ceramic capacitor
MY :Mylar capacitor
MM :Metallized mylar capacitor
PP :Polypropylene capacitor
MPP :Metallized polypropylene capacitor
MF :Metallized film capacitor
TF :Thin film capacitor
BP :Bipolar electrolytic capacitor
TAN :Tantalum capacitor

(3)Coils

No unit :[μH]
Others :As specified

(4)Power Supply

:B1(129.3V)
:B2(12V)
:9V
:5V

* Respective voltage values are indicated.

(5)Test Point

: Test point
: Only test point display

(6)Connecting method

: Connector
: Board in connector
: Wrapping or soldering
: Receptacle

(7)Ground symbol

: LIVE side ground
: NEUTRAL side ground
: EARTH ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (primary : ⊥) side GND and the NEUTRAL (secondary : ⏚) side GND. Therefore, care must be taken for the following points.

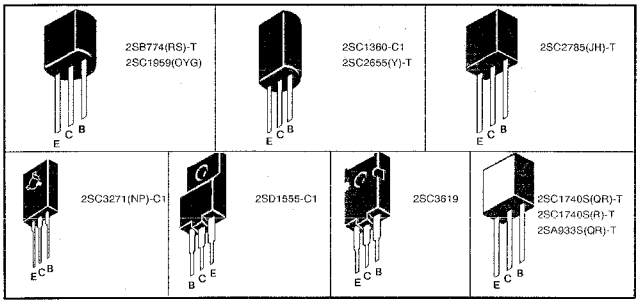
(1) Do not touch the LIVE side GND or the LIVE side GND and the NEUTRAL side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2) Do not short between the LIVE side GND and NEUTRAL side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and NEUTRAL side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

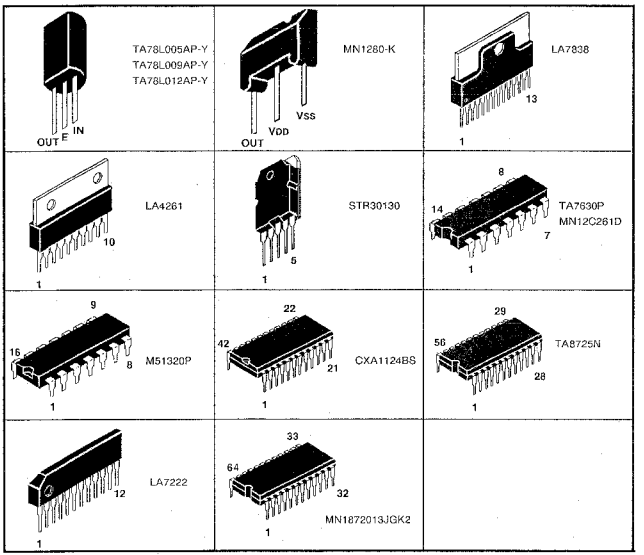
◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

SEMICONDUCTOR SHAPES

TRANSISTORS



ICs



CHANNEL CHART (US)

MODE TV	MODE CATV	BAND	CHANNEL REAL	CHANNEL DISP.	TUNER BAND
○	○	VL	02		I
			03		
			04		
			05		
			06		
		VH	07		II
			08		
			09		
			10		
			11		
			12		
			13		
×	○	MID	A	14	I
			B	15	
			C	16	II
			D	17	
			E	18	
			F	19	
			G	20	
			H	21	
			I	22	
		SUPER	J	23	
			K	24	
			L	25	
			M	26	
			N	27	
			O	28	
			P	29	
			Q	30	
			R	31	
			S	32	
			T	33	
			U	34	
			V	35	
			W	36	
		HYPER	W + 1	37	
			W + 2	38	
			W + 3	39	
			W + 4	40	
			W + 5	41	
			W + 6	42	
			W + 7	43	
			W + 8	44	
			W + 9	45	
			W + 10	46	
			W + 11	47	
			W + 12	48	IV
			W + 13	49	
			W + 14	50	
			W + 15	51	
			W + 16	52	
			W + 17	53	
			W + 18	54	
			W + 19	55	
			W + 20	56	
			W + 21	57	
			W + 22	58	
			W + 23	59	
			W + 24	60	
			W + 25	61	
			W + 26	62	
			W + 27	63	
			W + 28	64	
		ULTRA	W + 29	65	
			W + 30	66	
			W + 31	67	
			W + 32	68	
			W + 33	69	
			W + 34	70	
			W + 35	71	

MODE TV	MODE CATV	BAND	CHANNEL REAL	CHANNEL DISP.	TUNER BAND
×	○	ULTRA	W + 35	71	IV
			W + 36	72	
			W + 37	73	
			W + 38	74	
			W + 39	75	
			W + 40	76	
			W + 41	77	
			W + 42	78	
			W + 43	79	
			W + 44	80	
			W + 45	81	
			W + 46	82	
			W + 47	83	
			W + 48	84	
			W + 49	85	
			W + 50	86	
			W + 51	87	
			W + 52	88	
			W + 53	89	
			W + 54	90	
			W + 55	91	
			W + 56	92	
			W + 57	93	
			W + 58	94	
			W + 59	100	
			W + 60	101	
			W + 61	102	
			W + 62	103	
			W + 63	104	
			W + 64	105	
			W + 65	106	
			W + 66	107	
			W + 67	108	
			W + 68	109	
			W + 69	110	
			W + 70	111	
			W + 71	112	
			W + 72	113	
			W + 73	114	
			W + 74	115	
			W + 75	116	
			W + 76	117	
			W + 77	118	
			W + 78	119	
			W + 79	120	
			W + 80	121	
			W + 81	122	
			W + 82	123	
			W + 83	124	
			W + 84	125	
		SUB MID	A-8	01	I
			A-4	96	
			A-3	97	II
			A-2	98	
			A-1	99	
○	×	UHF	14 ~ 69		IV

TOTAL 180CH
{ VHF 124CH
{ UHF 56CH

NOTE:
TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES. SPECIAL ADAPTERS MAY BE REQUIED.

CHANNEL CHART (CA)

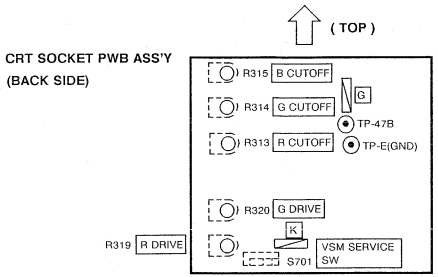
MODE TV	MODE CATV	BAND	CHANNEL REAL	CHANNEL DISP.	TUNER BAND
○	○	VL	02		I
			03		
			04		
			05		
			06		
		VH	07		II
			08		
			09		
			10		
			11		
			12		
			13		
×	○	MID	A	14	II
			B	15	
			C	16	
			D	17	
			E	18	
			F	19	
			G	20	
			H	21	
			I	22	
		SUPER	J	23	
			K	24	
			L	25	
			M	26	
			N	27	
			O	28	III
			P	29	
			Q	30	
			R	31	
			S	32	
			T	33	
			U	34	
			V	35	
			W	36	
		HYPER	W + 1	37	
			W + 2	38	
			W + 3	39	
			W + 4	40	
			W + 5	41	
			W + 6	42	
			W + 7	43	
			W + 8	44	
			W + 9	45	
			W + 10	46	
			W + 11	47	
			W + 12	48	
			W + 13	49	
			W + 14	50	
			W + 15	51	
			W + 16	52	
			W + 17	53	
			W + 18	54	
			W + 19	55	
			W + 20	56	
			W + 21	57	
			W + 22	58	
			W + 23	59	
			W + 24	60	
			W + 25	61	
			W + 26	62	
			W + 27	63	
			W + 28	64	
		ULTRA	W + 29	65	IV
			W + 30	66	
			W + 31	67	
			W + 32	68	
			W + 33	69	
			W + 34	70	
			W + 35	71	

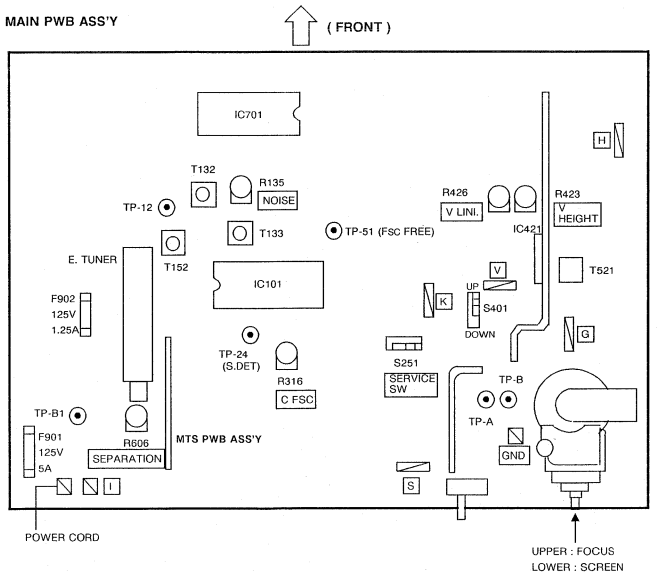
MODE TV	MODE CATV	BAND	CHANNEL REAL	CHANNEL DISP.	TUNER BAND
×	○	ULTRA	W + 35	71	IV
			W + 36	72	
			W + 37	73	
			W + 38	74	
			W + 39	75	
			W + 40	76	
			W + 41	77	
			W + 42	78	
			W + 43	79	
			W + 44	80	
			W + 45	81	
			W + 46	82	
			W + 47	83	
			W + 48	84	
			W + 49	85	
			W + 50	86	
			W + 51	87	
			W + 52	88	
			W + 53	89	
			W + 54	90	
			W + 55	91	
			W + 56	92	
			W + 57	93	
			W + 58	94	
			W + 59	100	
			W + 60	101	
			W + 61	102	
			W + 62	103	
			W + 63	104	
			W + 64	105	
			W + 65	106	
			W + 66	107	
			W + 67	108	
			W + 68	109	
			W + 69	110	
			W + 70	111	
			W + 71	112	
			W + 72	113	
			W + 73	114	
			W + 74	115	
			W + 75	116	
			W + 76	117	
			W + 77	118	
			W + 78	119	
			W + 79	120	
			W + 80	121	
			W + 81	122	
			W + 82	123	
			W + 83	124	
			W + 84	125	
		SUB MID	A-8	01	I
			A-4	96	
			A-3	97	II
			A-2	98	
			A-1	99	
○	×	UHF	14 ~ 69		IV

TOTAL 180CH
{ VHF 124CH
{ UHF 56CH

NOTE:
TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES. SPECIAL ADAPTERS MAY BE REQUIED.

MAINPARTS LOCATION AND ALIGNMENTS LOCATION



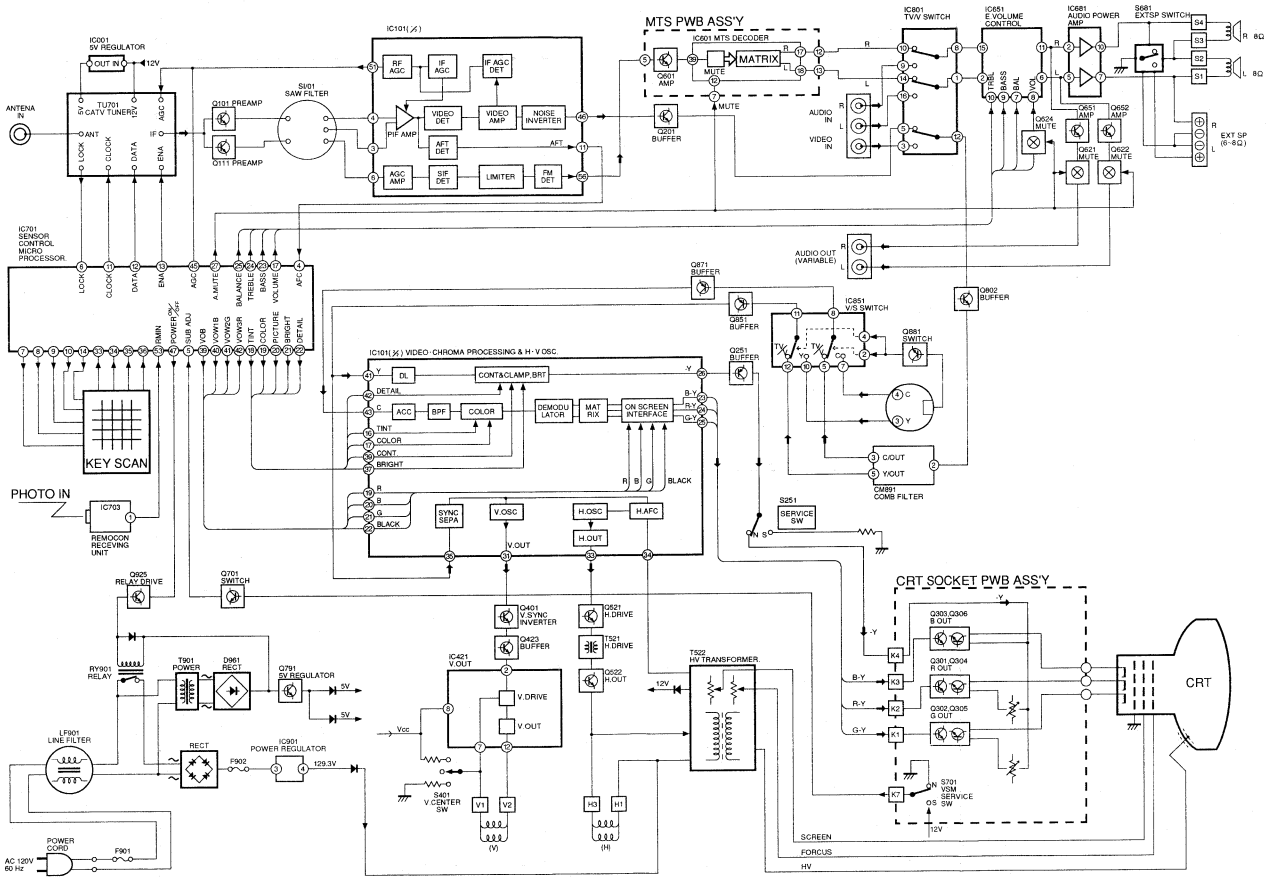


WIRING LIST

P.W.B. or PART NAME	CONNECTOR NAME	WIRE	CONNECTOR NAME	P.W.B. or PART NAME
MAIN PWB ASS'Y	G	⟷	G	CRT SOCKET PWB ASS'Y
MAIN PWB ASS'Y	H	⟷	WIRE	DEF.YOKE
MAIN PWB ASS'Y	I	⟷	WIRE	DEG.COIL
MAIN PWB ASS'Y	K	⟷	K	CRT SOCKET PWB ASS'Y
MAIN PWB ASS'Y	S(1,2)	⟷	+ −	SPEAKER(L)
MAIN PWB ASS'Y	S(3,4)	⟷	− +	SPEAKER(R)
MAIN PWB ASS'Y	GND	⟷	WIRE	CRT
MAIN PWB ASS'Y	V	⟷	WIRE	DEF.YOKE

●NOTE:Refer to Main Parts and Alignment Locations (Page 2-5) for detailed connector positions.

BLOCK DIAGRAM



AV-27BM3
AV-27CM3

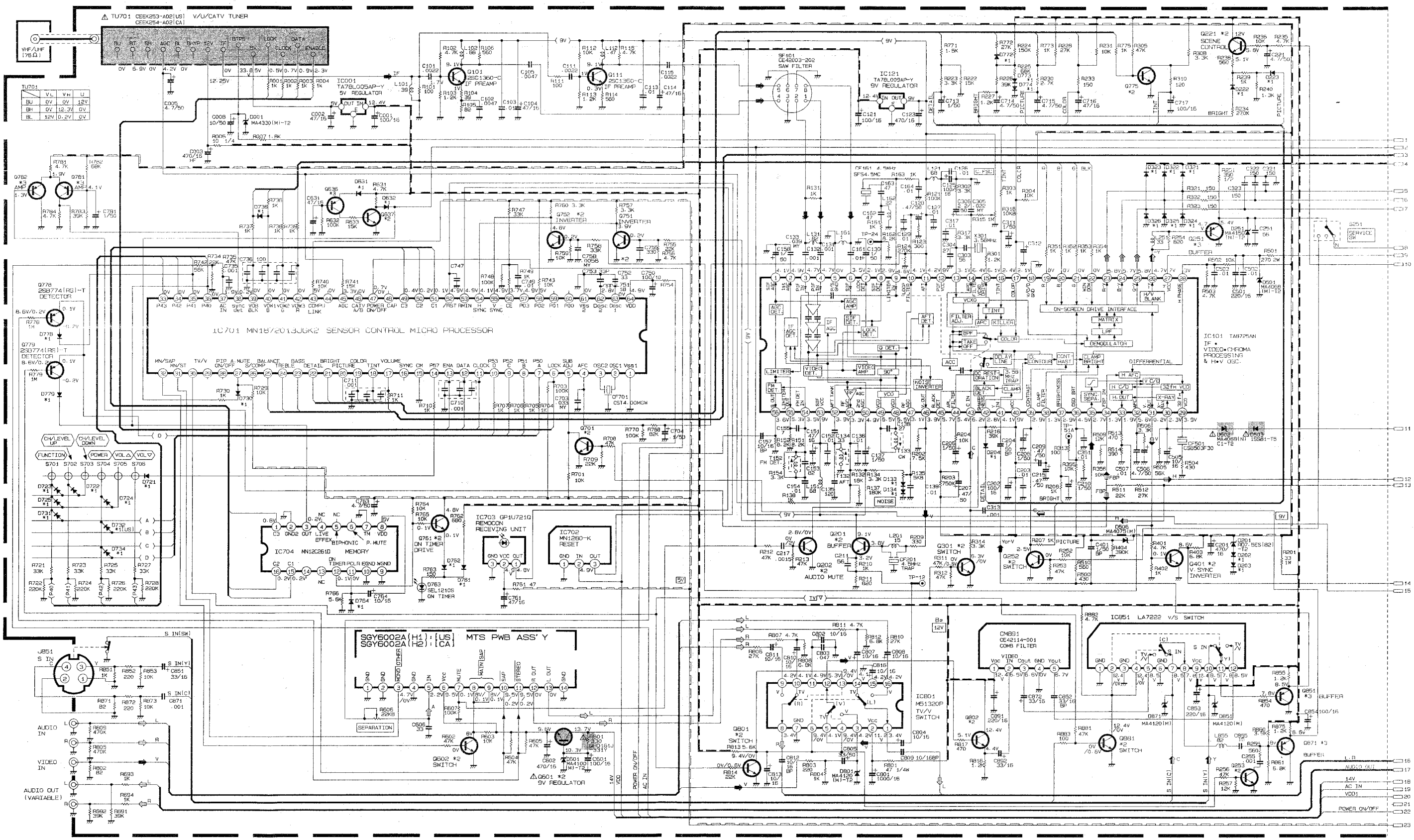
CIRCUIT DIAGRAMS AND PWB PATTERNS

MAIN PCB CIRCUIT DIAGRAMS

Refer to the following PW Board pattern : MAIN PWB PATTERN 2-17 page.

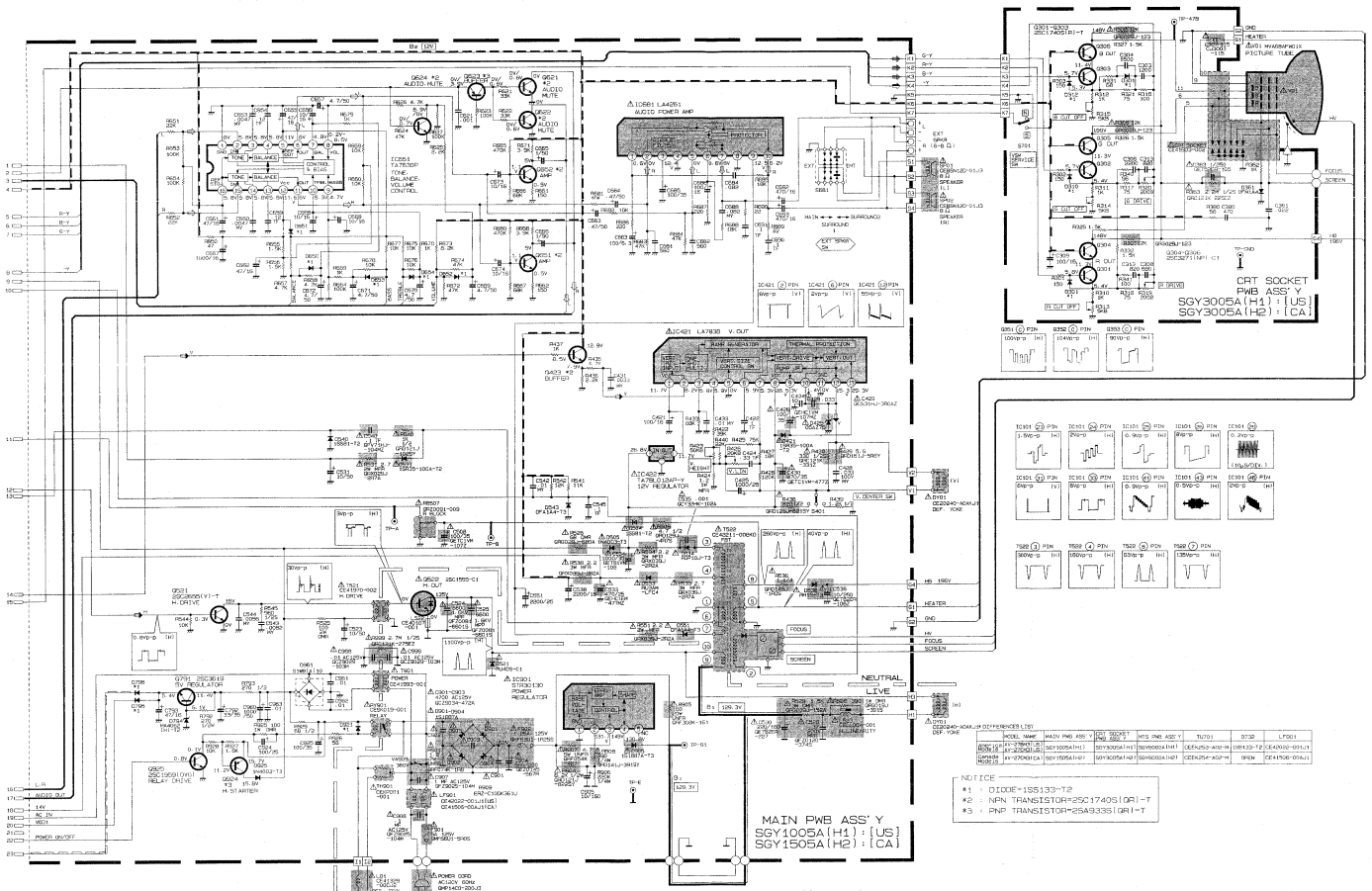
This schematic diagram applies to both (US) and (CA) models.

Refer to the Difference List in the diagram regarding the differing points between the models.


TU701 CEEK253-A02[US] V/U/CATV TUNER
CEEK254-A02[CA]
VHF/UHF (75Ω)
IC001 TA78L005AP-Y 5V REGULATOR
Q101 2SC1360-C IF PREAMP
Q111 2SC1360-C IF PREAMP
SF101 CE42003-202 SAW FILTER
IC121 TA78L009AP-Y 9V REGULATOR
Q221 *2 SCENE CONTROL
IC701 MN1B72013JGK2 SENSOR CONTROL MICRO PROCESSOR
IC101 TA8725AN IF • VIDEO•CHROMA PROCESSING & H•V OSC.
S251 SERVICE SW
Q251 *3 BUFFER
Q778 2SB774(RS)-T DETECTOR
Q779 2SB774(RS)-T DETECTOR
Q752 *2 INVERTER
Q751 INVERTER
IC704 MN12C261D MEMORY
Q761 *2 ON TIMER DRIVE
D763 SEL1210S ON TIMER
IC703 GP1U721Q REMOCON RECEVING UNIT
IC702 MN1280-K RESET
Q201 *2 BUFFER
Q202 *2 AUDIO MUTE
Q301 *2 SWITCH
Q252 *2 SWITCH
Q401 *2 V. SYNC INVERTER
SGY6002A(H1):[US] SGY6002A(H2):[CA] MTS PWB ASS' Y
Q602 *2 SWITCH
Q601 *2 9V REGULATOR
J851 S IN
AUDIO IN
VIDEO IN
AUDIO OUT (VARIABLE)
IC801 M51320P TV/V SWITCH
Q801 *2 SWITCH
CM891 CE42114-001 COMB FILTER
IC851 LA7222 V/S SWITCH
Q802 *2
Q881 *2 SWITCH
Q851 *3 BUFFER
Q871 *3 BUFFER
Q253 *2

MAIN PWB, CRT SOCKET PWB CIRCUIT DIAGRAMS

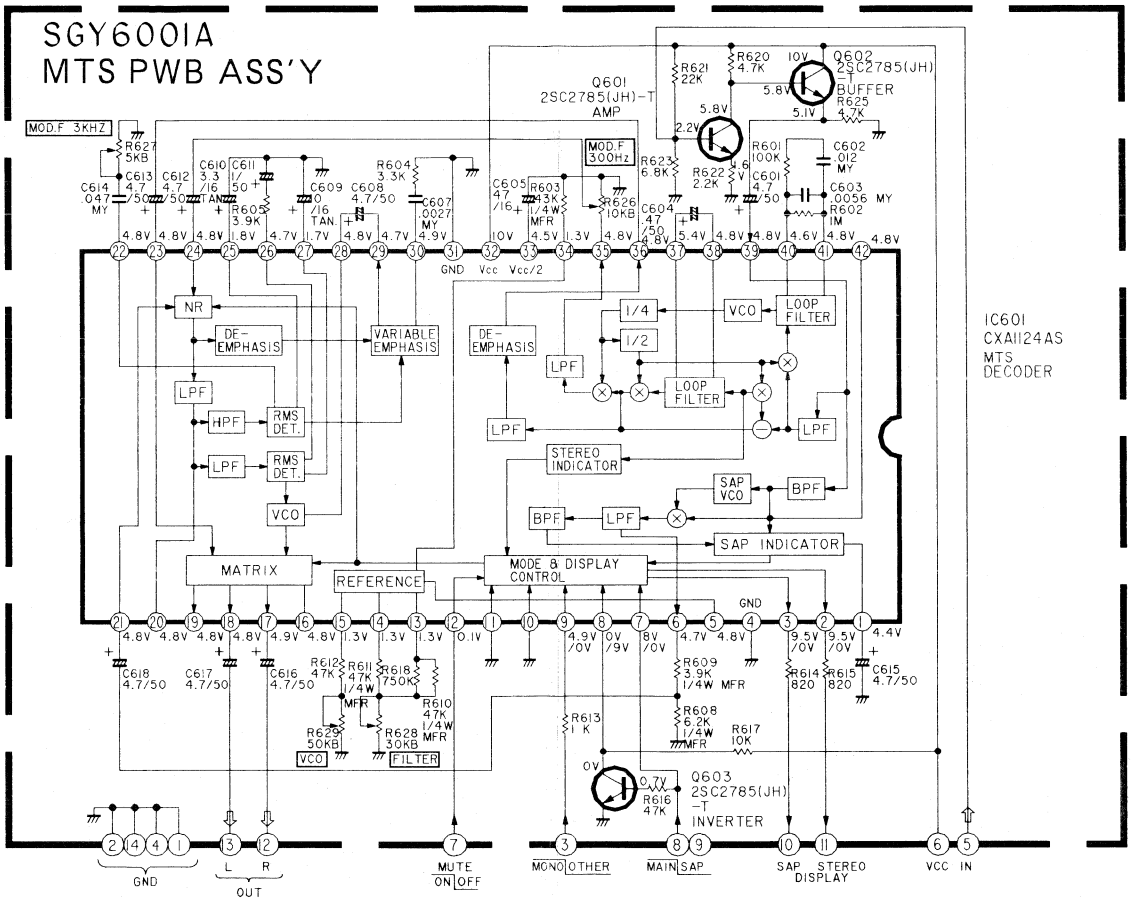
Refer to the following PW Board pattern : MAIN PWB PATTERN 2-17 page, CRT SOCKET PWB PATTERN 2-16 page.



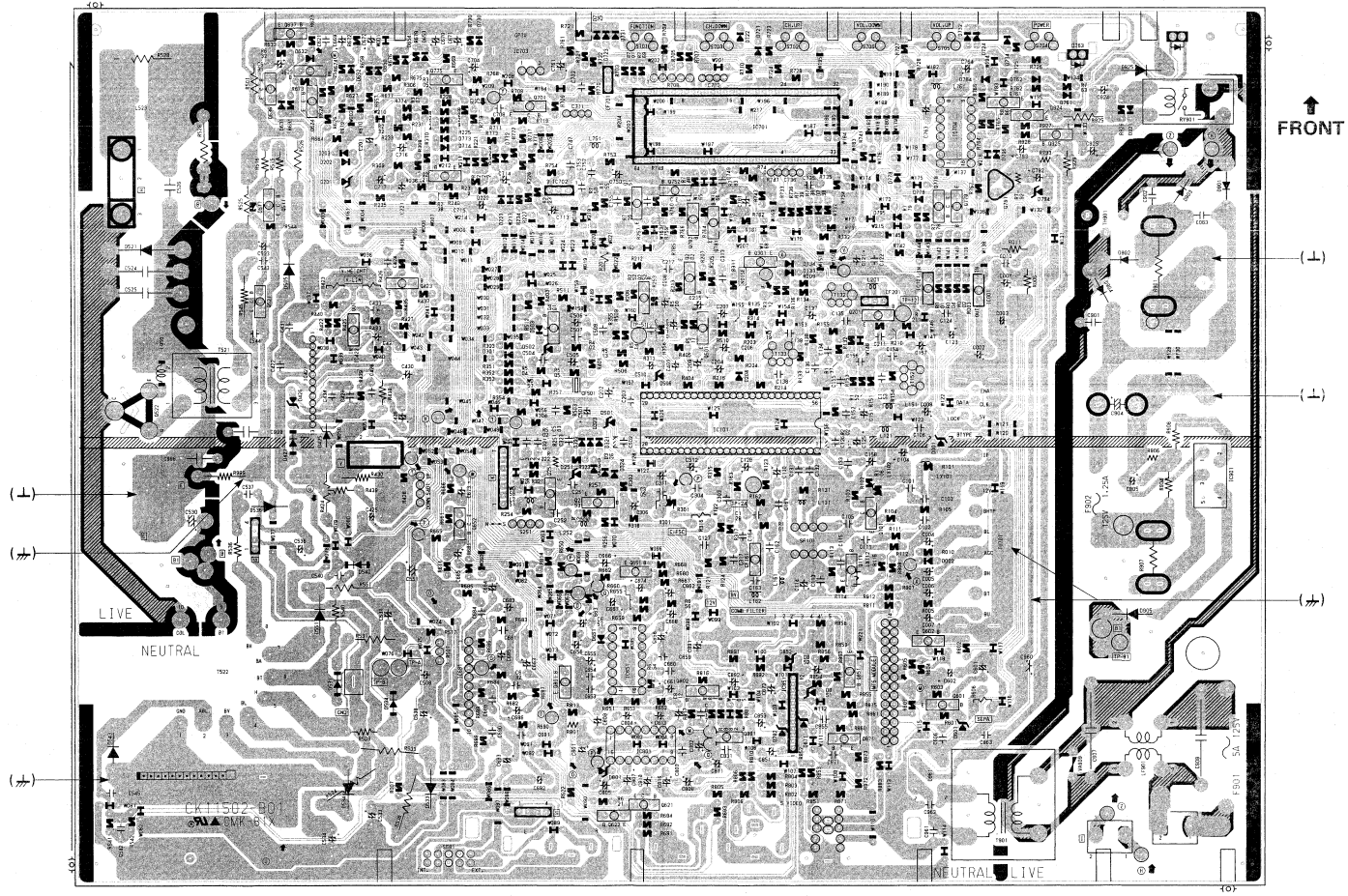
	MODEL NAME	MAIN PWB ASS'Y	CRT SOCKET PWB ASS'Y	MTG PWB ASS'Y	TU701	D732	LF001
MAIN PWB	AV-27BM3[US]	SGY1005A(H1)	SGY3005A(H1)	SGY6004A(H1)	CEKJ253-A02-H	1SS133-T2	CEAD302-001J1
	AV-27CM3[CA]	SGY1505A(H2)	SGY3005A(H2)	SGY6003A(H2)	CEKJ254-A02-H	OPEN	CE41506-00AJ1

MTS PWB CIRCUIT DIAGRAM

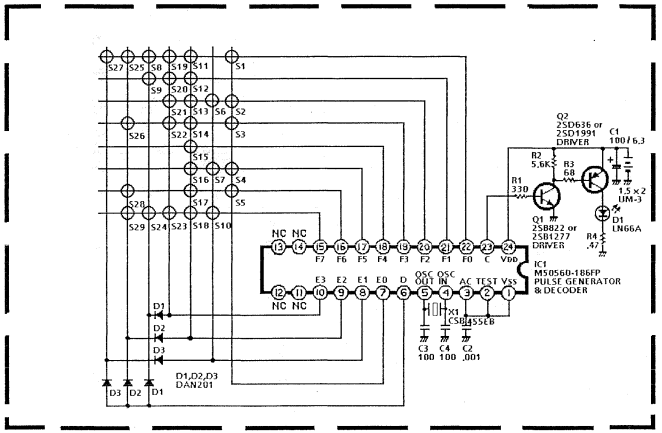
Refer to the following PW Board pattern : MTS PWB PATTERN 2-19 page.



MAIN PWB PATTERN [SGY1005A(H1)] (US) / [SGY1505A(H2)] (CA) (Magnification Rate 100 %)



REMOTE CONTROL TRANSMITTER CIRCUIT DIAGRAM [RM-C424-KD1-T]



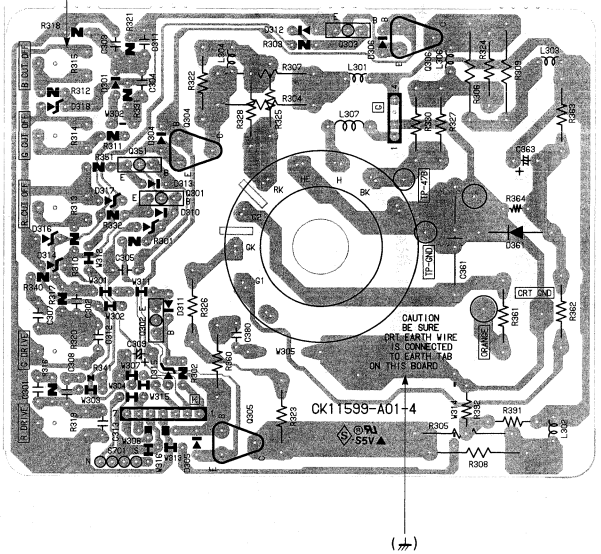
FUNCTION OF KEYS

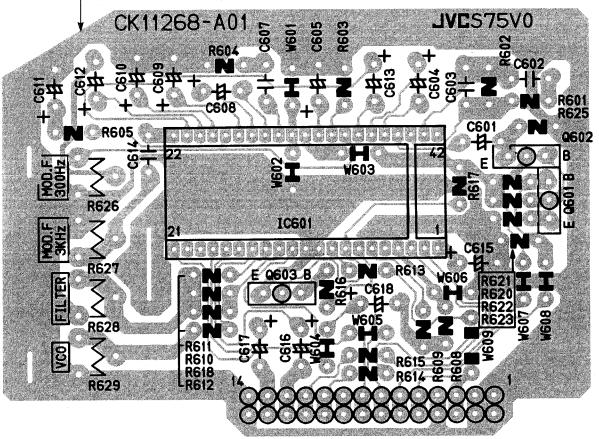
KEY NO.	FUNCTION	KEY NO.	FUNCTION
S1	MAIN / SAP	S16	3
S2	DISPLAY	S17	4
S3	RETURN	S18	5
S4	ANT / CABLE	S19	6
S5	AV STATUS / RESET	S20	7
S6	TV /VIDEO	S21	8
S7	POWER	S22	9
S8	CHANNEL -	S23	RECALL / CHOICE
S9	CHANNEL +	S24	FUNCTION +
S10	MUTE	S25	FUNCTION -
S11	VOLUME +	S26	100 +
S12	VOLUME -	S27	FUNCTION BACK
S13	0	S28	MENU
S14	1	S29	FUNCTION FORWARD
S15	2		

CRT SOCKET PWB PATTERN [SGY3005A(H1)] (US) / [SGY3005A(H2)] (CA)

TOP

(Magnification Rate 130%)



MTS PWB PATTERN [SGY6002A(H1)] (US) / [SGY6002A(H2)] (CA)

(≠) TOP (Magnification Rate 200%)